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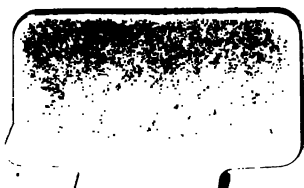
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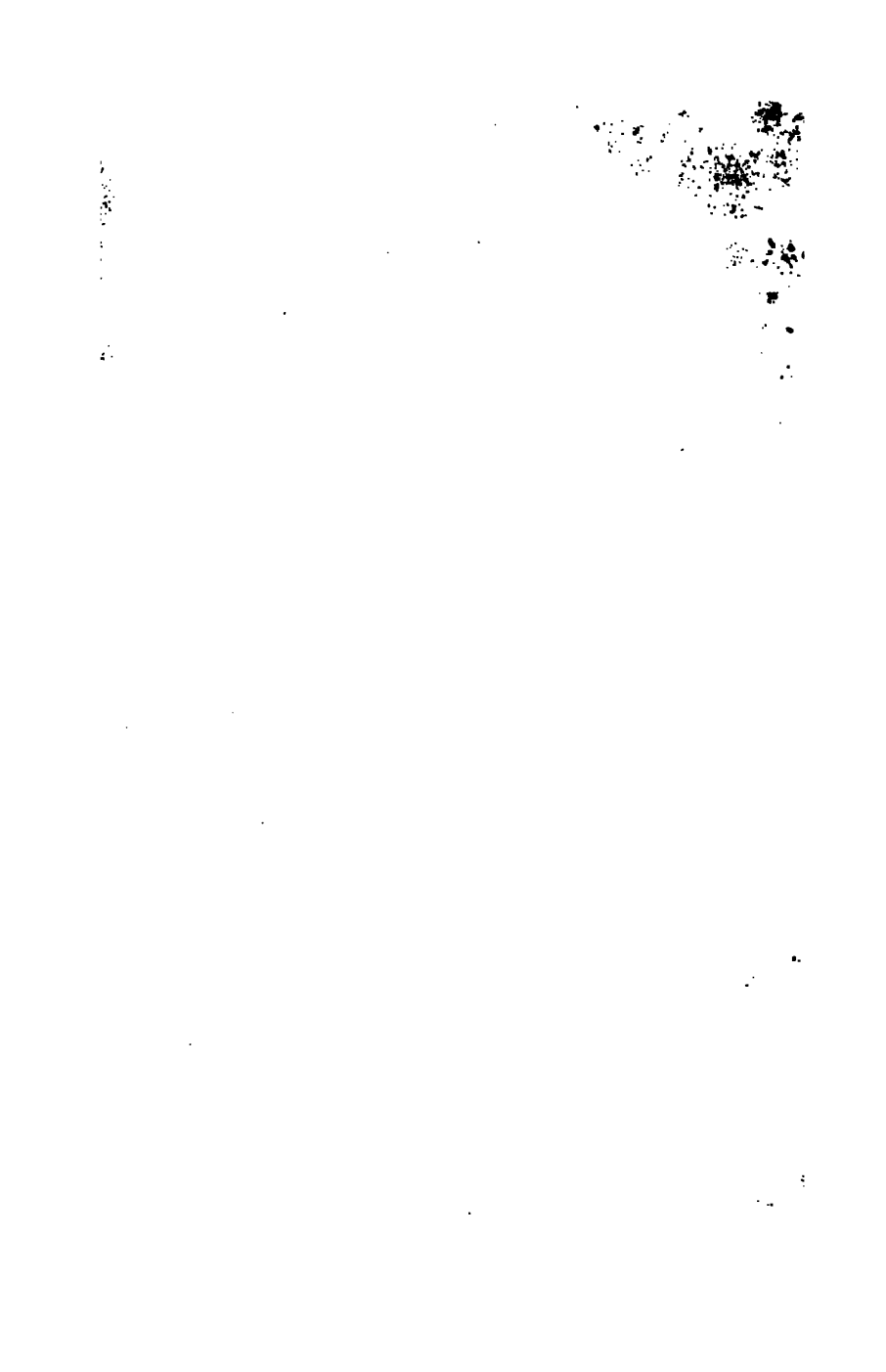
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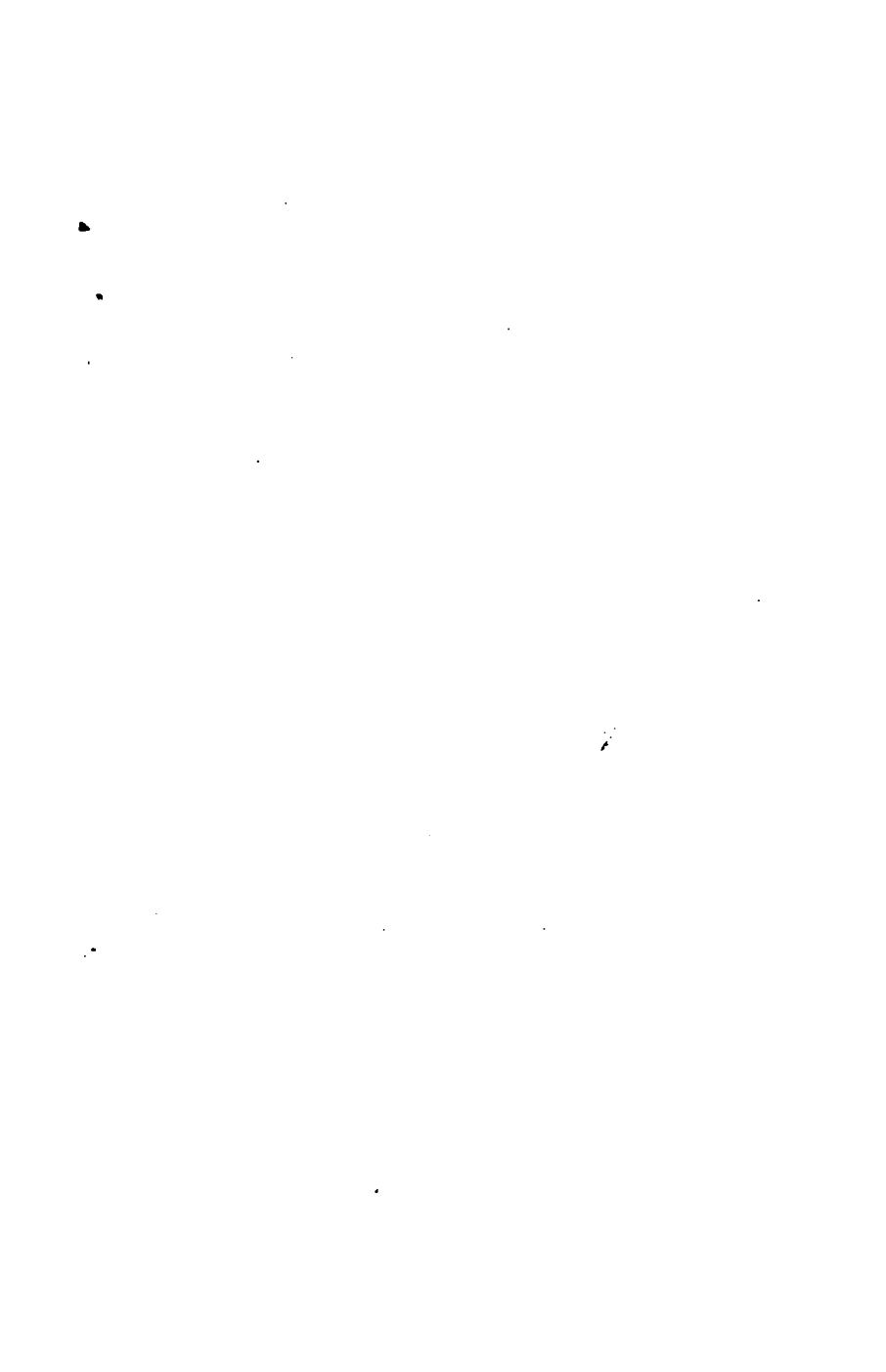
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GEOGRAPHICAL READING BOOKS

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EUROPE AND AMERICA

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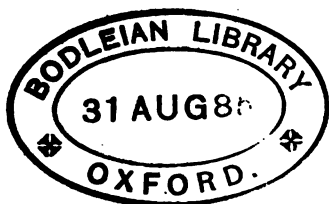
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CONTENTS.

LESSON	PAGE
I. OUTLINE OF EUROPE: SEAS	1
II. BOUNDARIES, EXTENT AND RELIEF OF EUROPE	5
III. HIGHLANDS OF SOUTH-WEST GERMANY	10
IV. THE ALPS	14
V. HIGHLANDS OF WEST, SOUTH, AND EAST EUROPE, ETC.	20
VI. RIVERS AND LAKES OF EUROPE	25
VII. CLIMATE OF EUROPE	29
VIII. PRODUCTIONS OF EUROPE	33
IX. PEOPLE OF EUROPE	38
X. NORWAY, SWEDEN, DENMARK, ETC.	43
XI. GERMANY	50
XII. SWITZERLAND	56
XIII. AUSTRIA-HUNGARY	62
XIV. BELGIUM AND HOLLAND	67
XV. FRANCE	72
XVI. PENINSULAS ON THE MEDITERRANEAN	76
XVII. THE IBERIAN PENINSULA	81
XVIII. ITALY	88
XIX. ITALY, <i>continued</i>	92
XX. GREECE	99
XXI. BALKAN PENINSULA	104
XXII. RUSSIA	109
XXIII. RUSSIA, <i>continued</i>	114
XXIV. FORM, SITUATION, AND PHYSICAL FEATURES OF NORTH AMERICA	119
XXV. RIVERS AND LAKES OF NORTH AMERICA	123
XXVI. CLIMATE OF NORTH AMERICA	126
XXVII. PRODUCTIONS OF NORTH AMERICA	130
XXVIII. PEOPLE OF NORTH AND SOUTH AMERICA	135

LESSON	PAGE
XXIX. UNITED STATES	138
XXX. NORTH-EAST UNITED STATES	141
XXXI. SOUTH-EAST UNITED STATES	146
XXXII. THE ARID REGION.	150
XXXIII. THE PACIFIC COAST: ALASKA	155
XXXIV. MEXICO AND CENTRAL AMERICA	159
XXXV. PHYSICAL FEATURES OF SOUTH AMERICA	164
XXXVI. MOUNTAIN SYSTEMS OF SOUTH AMERICA	167
XXXVII. RIVERS, PLAINS, AND LAKES OF SOUTH AMERICA	170
XXXVIII. RIVERS, ETC., <i>continued</i>	173
XXXIX. CLIMATE AND VEGETATION OF SOUTH AMERICA	178
XL. CLIMATE, ETC., <i>continued</i>	182
XLI. PRODUCTIONS OF SOUTH AMERICA	187
XLII. PEOPLE OF SOUTH AMERICA	192
XLIII. STATES OF SOUTH AMERICA	196

APPENDIX.

AREA AND POPULATION OF STATES OF EUROPE	200
SEAS, BAYS, AND GULFS OF EUROPE	201
CAPIES OF EUROPE.	202
LAKES AND ISLANDS OF EUROPE	202
MOUNTAIN RANGES OF EUROPE	203
CHIEF TOWNS OF EUROPE	204
AREA AND POPULATION OF NORTH AMERICA	211
CHIEF TOWNS IN THE UNITED STATES	211
STATES OF SOUTH AMERICA.	213
ANIMALS OF EUROPE AND AMERICA	214

MAPS.

(To be placed at end).

PHYSICAL MAP OF EUROPE
 POLITICAL MAP OF EUROPE
 NORTH AMERICA
 SOUTH AMERICA

EUROPE AND AMERICA.

LESSON I.

EUROPE, I.

OUTLINE—SEAS.

WE will begin our lessons on the geography of Europe by considering the most obvious and striking feature of that continent. When we see it represented Varied outline of Europe. on a map of the world, the one thing that none of us can fail to observe is that its outline is much more varied than that of any of the other continents. Peninsulas are here more numerous than anywhere else. The whole of the west of Europe may indeed be considered as formed of two great peninsulas with the adjacent islands.

One of these peninsulas is made up of Norway and Sweden, composing together Scandinavia; and the other is the whole of that part of the continent which lies between the Baltic Sea and the Mediterranean. The latter peninsula has attached to it a number of smaller peninsulas, most of which are yet large enough to make great countries. It is only in the east of Europe that there is any great extent of unbroken land, and even in

that quarter there is no spot more than a thousand miles inland.

But why is it of such importance to be near the sea? We shall see in our subsequent lessons that there

The advantage of this feature.

are more reasons than one for reckoning this as an advantage, but the principal reason is that it favours commercial intercourse. In all countries the inhabitants have need of more than they produce for themselves; and those commodities which they do not produce for themselves they must buy from the inhabitants of other countries, giving in exchange what they can produce in their own country in excess of what they require for their own use. Now in making this exchange, it is manifestly of importance to be able to do so as cheaply as possible, and transport of goods can usually be effected more cheaply by sea than in any other way. On the sea no roads or railways have to be built and kept in repair. All that is necessary is to have ships fitted to carry merchandise, and sailors to manage them. When these are provided, the articles of commerce, that have been brought to the seaports, can be conveyed at comparatively little cost to any other country that borders on the sea, and so also foreign products can be introduced at equally little expenditure from the same countries. On the land, one road will only take you to one place, but the sea will carry you anywhere, except to countries that have no sea-coast.

Since Europe is thus so largely broken up into islands and peninsulas, the waters that wash its shores

Seas and gulfs.

are more or less isolated from the ocean, and different names are given to the portions

partially cut off in that way. They are called seas and

gulfs. In the north of Russia there is the White Sea, communicating by a comparatively narrow strait with the Arctic Ocean. Between the two great peninsulas of which Western Europe is mainly composed there lies, as we have seen, the Baltic Sea; and the branches of this sea in the north and east are called the Gulfs of Bothnia, Finland, and Riga; the Gulf of Bothnia lying between Scandinavia and Finland, the Gulf of Finland on the south of the territory from which it takes its name, and the Gulf of Riga on the west of Russia still farther to the south.

By the two straits of the Kattegat and Skager-Rack, to the south of Scandinavia, the Baltic communicates with the North Sea or German Ocean, which separates the British Isles from the European mainland, and in the south this sea is connected with the English Channel by means of the Strait of Dover. The name of the Bay of Biscay (from the Spanish province of that name inhabited by a people known as the Basques) is given to the large bay between the west of France and the north of Spain.

Finally, in the south of Europe lies the Mediterranean with its branches and continuations, separating this continent from Africa and from Asia. Both the Adriatic Sea, between Italy and the Balkan Peninsula, and the Archipelago or Ægean Sea, between the Balkan Peninsula and Asia Minor, may be considered as essentially belonging to the Mediterranean, though sufficiently isolated to receive separate names; but the Sea of Marmora, the Black Sea, and the Sea of Azof, while communicating with the same great sea, are cut off from it and from each other by very narrow straits.

The smallest of the seas mentioned is the Sea of Marmora, which is about one-thirteenth of the size of England, while the Mediterranean Sea, including the Adriatic and the Archipelago, but without counting the islands scattered over it, is more than eleven times the size of Great Britain.

But the mere extent of surface occupied by the different seas affords little idea of the volume of water which they contain. The seas situated on the north of Europe are so shallow that they might be looked upon as submerged portions of the mainland, while those on the south, except the Sea of Azof, are so deep, that we are tempted to regard them as portions cut off from the ocean.

If we compare the Baltic in particular with the Mediterranean, the contrast just indicated is not the only one that exists between the two. They are suitable for comparison, inasmuch as they are both inland seas, communicating by comparatively narrow straits with the ocean. But they are inland seas placed by the difference of their situation under different conditions. The Mediterranean lies in a latitude in which the sun is never very low at midday even in winter, and rises very high at midday in summer. Its rays are here consequently always very powerful. A great amount of evaporation is thus produced, and consequently the Mediterranean loses more fresh water through the action of the sun than it gains from the rivers that flow into it. Hence its waters tend to become salter, and they actually are salter, than those of the ocean. Hence, too, the loss of water due to evaporation has to be made up by some other means

Extent and
depth of the
European
seas.

The Medi-
terranean
and the
Baltic com-
pared.

than the influx of rivers, and this is done by a current which constantly flows inwards from the Atlantic Ocean through the Strait of Gibraltar.

In the case of the Baltic it is exactly the opposite. There the rivers from Germany and Russia, and still more the numerous rapid streams that flow into the Gulf of Bothnia from Sweden, pour into the Baltic a greater abundance of fresh water than it can get rid of by evaporation—a process which there goes on much more slowly than farther south—and hence the surplus water flows outwards to the ocean in a current which sweeps through the Kattegat and Skager-Rack. For this reason, too, the waters of the Baltic are much fresher than those of the ocean, and all the more because the sea is so shallow.

LESSON II.

EUROPE, II.

BOUNDARIES AND EXTENT—GENERAL RELIEF OF THE LAND.

WHEN we consider the land surface of Europe, we find that the mainland extends through nearly 80 degrees of longitude¹ and 35 degrees of latitude.² Its
Length and breadth. length, from the extreme north of Norway to Cape Matapan in Greece, is about 2,400 miles; and its

¹ 70° E. in the north-east of Russia to about 9½° W. in the west of Portugal.

² About 36° N. in the south of Greece to about 71° N. in the north of Norway.

breadth, on the parallel of 50° N., which runs nearly through the middle of the continent from the north-west of France to the River Ural, is about 2,225 miles.

The area of the land surface of Europe is differently given by different authorities according to the limits chosen as the boundaries between Europe and

Area.

Asia. For Europe and Asia are joined to one another in such a manner that there is not perfect agreement as to where Europe ends and Asia begins. Usually the Ural Mountains and Ural River, with the Caspian Sea, are taken as the frontier in the east, but part of the territory on the other side of the Ural Mountains and Ural River belongs politically to European Russia. Again, in the south-east, the crest of the Caucasus Mountains is very commonly assumed to be the frontier line between the two contiguous continents; but in this part the region north of the Caucasus is so different from the adjoining parts of Europe, while resembling more closely the Asiatic regions south of the Caucasus, that some think it better to place the frontier farther north. In that case the frontier line is held to run along a deep depression of the surface which extends from the River Don to the Caspian Sea, and which is traversed for the greater part of its length by the River Manich, a tributary of the Don.

Thus the smallest area of Europe is obtained when we assume the Ural Mountains and Ural River as the boundary in the east, and this Manich depression as that in the south-east. Careful measurements have shown that the total area within these limits is about

3,750,000 square miles, or about forty-two times the size of Great Britain with the adjoining small islands.¹ The area just mentioned includes not only the mainland, but also the islands, with Iceland and Novaya Zemlya among the number.

The surface of the European continent is as diversified as its outline. If we look at the mainland as a whole, we may divide it into three regions.

Surface.

In the north there is a highland or mountainous region occupying the peninsula of Scandinavia. In the south there is another mountainous region, which begins about the middle of Germany near the latitude of London, and extends over most of the area to the south. This southern highland area is bounded on the north on one side by a line running south-westwards from the point mentioned through France to the Pyrenees, and on the other side by a line stretching south-eastwards towards the Danube.

Between these two mountainous areas in the north and south there is a vast plain which stretches continuously from the shores of the English Channel and the North Sea to the east of Europe, and in Russia spreads out north and south from the shores of the Arctic Ocean to those of the Black Sea.

Iceland shares the highland character of Scandinavia, and so also do the north and west of Britain, whereas, if this latter island were once more elevated so as to be connected with the mainland of Europe, the south-east portion of it would become part of the great central plain. The islands of the Mediterranean re-

¹ This area is in round numbers 90,000 square miles, and is a good unit to adopt in comparing large areas with one another.

semble the adjoining peninsulas in the mountainous character of their surface.

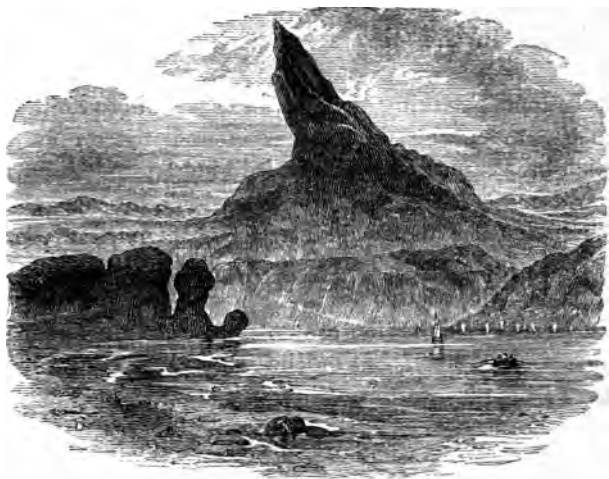
But notwithstanding the considerable area which we have thus seen to be occupied by mountains, the extent of the lowlands of Europe is so great that if the continent were depressed to a depth of 500 feet, more than half of its present surface would be submerged, and all that would remain above the water would be a number of mountain chains and groups, together with two or three considerable plateaux in regions now occupied by Scandinavia, France, and Spain.

And when we think of the high mountains that are to be seen in some parts of Europe—mountains rising in some cases to more than two, occasionally nearly three miles in height—it is important to remember that these elevations are quite exceptional. Even low mountains rise very much above the average height of the land—that is, the height which Europe would attain above the sea-level supposing all its mountains and table-lands were pared down and spread equally over its surface. This mean elevation has been calculated in the case of Europe with great care, and has been found to be in round numbers about 980 feet.

In the case of the sea it is different. The inequalities in the sea bottom are not nearly so great as those on the surface of the land, and the greatest depth is not very much greater than the average depth. In the Mediterranean Sea, for instance, there is no part so deep as some of the mountains of Europe are high, yet the average depth is estimated to be nearly four times

Average
height of
the land
compared
with the
average
depth of the
sea.

the average height of the land area of Europe above sea-level; and it will give a good idea of the relative amount of land above sea-level in the continent of Europe and of water in the Mediterranean Sea, to mention that if the whole of the land of Europe were removed and spread equally over the bottom of the Mediterranean, it would not completely fill the immense trough



SCENE ON THE COAST OF NORWAY.

which that sea occupies, but would still leave some forty feet of water to cover the submerged land.

Of the two highland regions of Europe the northern one, or that filling the greater part of the Scandinavian peninsula, is that in which the mountains rise least above the general level of the land. There the highlands do not form a chain of mountains, or several chains, but a continuous series of plateaux

The north-
ern high-
land region.

stretching from north-east to south-west through a length of 1,200 miles. The average breadth of this plateau region (understanding by that term the whole area above 500 feet in height) is about 200 miles. The average height of the northern portion is from 1,600 to 2,100 feet, that of the southern from 2,600 to 3,700 feet. Rarely do the higher summits exceed 5,000 feet in height, and the highest point in the whole peninsula, in the Giant's Mountains, is no more than 8,550 feet.

The most striking features in this region are in fact not the mountains, but the deep and narrow gorges which break up these plateaux into huge tabular or flat-topped masses, the vast glaciers which descend these gorges, and the mountain streams that frequently precipitate themselves over their sides in magnificent cataracts. The most picturesque and striking mountain forms of this region are not, as a rule, to be seen on the table-land itself, but on the rocky islands that everywhere fringe its western coast.

LESSON III.

EUROPE, III.

THE HIGHLANDS OF SOUTH-WEST GERMANY AND ADJOINING REGIONS.

IN the last lesson it was stated that the highland region of Southern Europe ascends in the middle to about the latitude of London—that is, about $51\frac{1}{2}^{\circ}$ N. There

end the Hartz Mountains, a range of greater celebrity than their elevation and extent would suggest. Their highest summit, the Brocken or Blocksberg, The Hartz Mountains. is exceeded in height by more than one of the mountains of our own islands. As compared with the Scandinavian highlands, they are utterly insignificant in extent, for they consist simply of a few parallel ridges stretching from south-east to north-west for about fifty miles. But they owe their celebrity in a great measure to the principal circumstance that distinguishes them from the highlands just mentioned. They do not belong to a plateau, but stand isolated on all sides. On the north they overlook the great central plain of Europe, while on the south they are separated by a valley from the nearest members of the rest of the German highlands. Hence, though not lofty, and, compared with other equally celebrated mountain ranges, not very extensive, they are conspicuous. But in addition to that they have from very early times been famous for their mines, and the legendary tales connected with the Hartz miners have helped to make the name known to the people throughout Germany and even beyond it.

In the rest of Germany there are but few mountains that need be singled out for special mention. The whole region is one of plateaux of about The highlands of South Germany. 1,600 feet above sea-level and upwards, traversed here and there in various directions by mountain chains of no great elevation. The plateaux are less continuous and more varied in height than those of Scandinavia, and the valleys by which they are intersected, such as those of the Rhine, the Neckar, and the Main, are broader, less precipitous, and more wind-

ing than the Scandinavian ravines. From the difference of latitude, too, the climate is altogether different. The valleys are not high enough to be filled with glaciers, nor the mountains to be clad with perpetual snows.

Highlands of this character fill the whole of Germany east and west of the Rhine nearly as high as the latitude of Cologne, while west of the Rhine they spread over the south-east of Belgium and the north-west of France.

Throughout all this region there are only three tracts that it is worth while to take special note of in this place. One of these is the Thuringian Forest, a narrow chain of mountains, or rather hills, that runs in the same direction as the Hartz Mountains—namely, from north-west to south-east—and which lies a little to the south and east of the latter range, stretching towards Bohemia. The highest summits in the chain are not very much over 3,000 feet in height, but its length is almost three times that of the Hartz—that is to say, about 150 miles.

The other two districts of this highland region which it is important to remember separately are those which lie on the two sides of the Rhine valley between Basel, or Bâle (where the river turns northwards on leaving the frontiers of Switzerland), and Mayence, or, as the Germans call it, *Mainz*, where it makes another bend.

On the west side of this valley lie the Vosges Mountains, which stretch north and south for 175 miles, and for a great part of their course form the frontier between France and Germany. They are the highest mountains that we have yet had to mention in the highland region of Southern Europe. The loftiest

summits are situated in the southern part of the chain, and have a peculiar rounded form to which the French apply the name of *ballon*, the Germans that of *Belchen*. The highest summit of all is the Grand Ballon or Sulzer Belchen, which attains a height of about 4,680 feet, or less than 300 feet higher than the loftiest of the British mountains.

The highland tract on the east side of the Rhine to which we wish particularly to refer is the far-famed Black Forest or *Schwarzwald*. Though an elevated region, it is not properly a mountain range, but merely a broad plateau lying opposite the southern half of the Vosges, and crowned by dark forests of pine, to which it owes its name. Its culminating point, the Feldberg, in the south, is 200 feet higher than the loftiest summit of the Vosges.

Proceeding still farther to the south-west we come to still loftier mountains. The Jura Mountains form a series of parallel ridges stretching from south-west to north-east between the valley of the Saône in France and that of the Aar in Switzerland. The ridges are unusually regular in outline, and are separated for the most part by high and gently-sloping valleys. The ascent to the mountains from the French side is very gradual, but on the Swiss side, where they overlook the valley of the Aar, they terminate rather abruptly with a steep face towards the plain. The highest summits (Dôle, Mont Dore, &c.) are in the extreme south-west, in France, and are not far short of 6,000 feet in height. The general elevation gradually sinks towards the north, till, on approaching the frontier of Germany, it diminishes to about 2,000 feet.

On the other side of the Aar valley we come to the highest and most magnificent, most varied and picturesque mountain system in Europe. The system referred to is that of the Alps, an account of which will be given in our next lesson.

LESSON IV.

EUROPE, IV.

THE ALPS.

IN our last lesson we spoke of the Alps as a mountain *system*. We did so because they do not form a chain or range, or even a series of chains, but consist of a vast assemblage of mountains, arranged sometimes in series of chains, but more frequently in parallel or nearly parallel chains with lofty connecting ridges here and there, and with numerous transverse spurs running down to the intervening valleys. They sweep round all the north of Italy, beginning in the west on the frontier of Italy and France, where they run north and south, then striking eastwards through Switzerland, and passing thence in three principal parallel chains into the western provinces of the Austrian dominions. The most easterly spurs advance close up to the point where the Danube turns abruptly southwards as it flows through Hungary. In the south-east they send off branches to the north-west of the Balkan Peninsula, where they become merged in the lofty

General
description.

highlands of that region. In this direction accordingly the limit of the Alps can hardly be precisely defined.

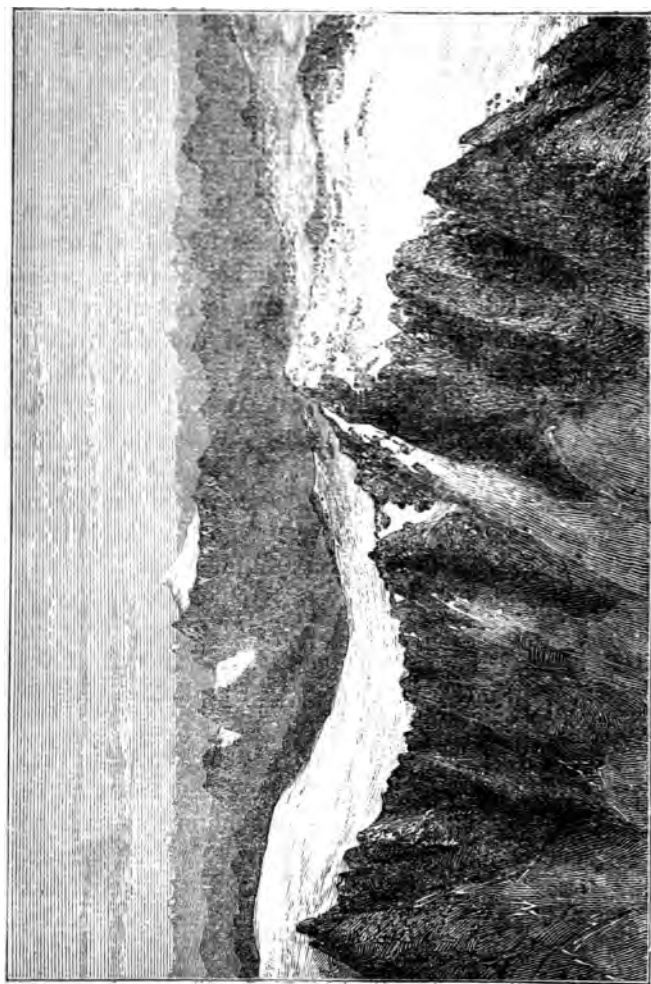
The whole area occupied by the Alps is estimated at 90,000 square miles, an area just about equal to that of

Extent. Great Britain with the small islands adjacent, and less than half of that covered by the highlands of Scandinavia.

The system is least complex in the west, where a continuous series of mountain chains form the French and Italian frontier. The height of the peaks The south-western ranges. in this part of the system is not so great as elsewhere, but in ascending some of the side valleys that here lead from France into Italy one may witness some of the wildest and most rugged scenery in Europe.

At the northern end of this part of the system, at the knot where it meets the southernmost of the chains stretching east and west, stands the loftiest Highest peaks. mountain in the Alps, and, apart from the Caucasus, in all Europe. This is Mont Blanc in Savoy, which rises to the height of 15,730 feet, or close upon three miles. Not far off, on the Italian and Swiss frontier, stands Monte Rosa, another peak that rises to upwards of 15,000 feet in height.

Both of these mountains belong to the chain that forms the southern boundary of the Rhine valley above the Lake of Geneva. But this mountain system is no longer so simple as it is between Italy and France. On the northern side of the same valley there stretches another lofty chain of the Alps, with numerous peaks, such as the Wetterhorn and Wellhorn, the Eiger, Monk, and Jungfrau, upwards of 13,000 feet in height.

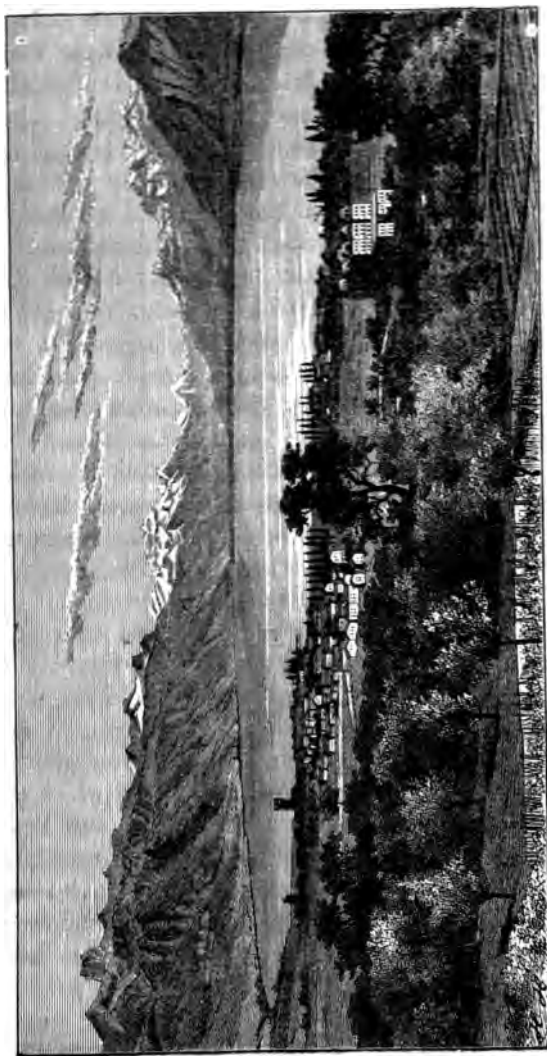


SCENE IN THE HIGH ALPS.

As we pass eastwards the system gets more and more complex. The principal chains and their most important spurs or offshoots form a confused network of mountains, rising sometimes from low-lying valleys, sometimes, as in the south-east of Switzerland, from elevated plateaux. At the same time the system increases in breadth, until at last there is a distance of 170 miles between its northern and southern base.

The peaks in general soar to a great height above the mean elevation of the chains to which they belong, the chains thus presenting to view a very jagged outline when seen from a sufficient distance. Even in summer the mountain slopes are clothed a certain way down with mantles of snow, and in the valleys this snow is first melted by the heat of the sun and then congealed again into ice, which slowly creeps downwards in the form of glaciers. When thus consolidated the frozen water is much more difficult to melt than in the form of snow, and these glaciers consequently descend far below the snow-line before they finally succumb to the power of the sun's rays. On their surface they carry lines of stones and fragments of rock that have been broken off the mountain sides by the action of frost, and lie strewn over the ice. These are called *moraines*, and the rocks of which they are composed are carried into the valleys, and left at the foot of the melting glaciers. Such deposits are always evidence of glacial action; and it is interesting to learn from these and other signs that in some former epoch the glaciers of the Alps must have been enormously larger than they are at present.

Perpetual
snow and
glaciers.



LAKE OF GENEVA.

Another feature that adds beauty and variety to the scenery of the Alps is the number of large lakes occupying the valleys at their base, especially in Italy and Switzerland. On the south side of the mountains there are the Lakes of Como, Maggiore, Lugano, and Garda, amid all the luxuriance of Italian vegetation, and in the great longitudinal valleys to the north lie the Lakes of Geneva and Lucerne, Brienz and Thun, Zürich and Zug, all bordered by the richest pastures and the most beautiful tree-clad slopes, sometimes overhung by magnificent frowning precipices.

The Alps are not so much of a barrier to communication between north and south as might be imagined from their extent and height. The deep notches between the different chains of which they are composed are crossed in many cases by important highways, the most elevated point in which is seldom more than 7,000 feet above sea-level. Of such highways leading across mountain passes there are about forty in all, and there are numerous other passes uncrossed by roads but capable of being used by travellers, either on foot or mounted. Among the great passes the most celebrated are those of Little St. Bernard, between France and Italy; those of Great St. Bernard and Simplon, leading across the chain bounding the Rhone valley on the south into Italy; and the St. Gothard Pass, leading north and south across the very heart of the system.

In recent times still better means of intercourse have been provided by piercing the mountains with railway tunnels. Long tunnels already exist near Mont Cenis, under the St. Gothard Pass,

and through the Arlberg and the Brenner in Tyrol. Other Alpine tunnels are in contemplation, the most important of which is one under the Simplon Pass.

LESSON V.

EUROPE, V.

THE HIGHLANDS OF THE WEST, SOUTH, AND EAST—THE GREAT EUROPEAN PLAIN.

THE valley of the Rhone separates the Alps from the highland region of Central and Southern France. This region is mainly a bleak plateau, which gradually rises in terraces from the western plain to a level of about 3,000 feet, and sinks down rather abruptly to the Rhone valley on the east, and that of the Garonne on the south-west. On the north it is divided from the highlands continuous with those of South Germany by a depression between the basins of the Loire and Saône. On its south-eastern border the Cevennes rise to the height of 5,000 feet and upwards, but a still more remarkable series of elevations crowns the plateau near the centre of the country.

The high-land region of France.

The extinct volcanoes of Auvergne. These are the mountains of Auvergne, a chain of extinct volcanoes, locally known as *puy*s. They number about seventy, and, like most volcanic mountains, are conical in form. Many of them still preserve their craters complete, but in other cases the walls of the crater are broken down on one side, where the lava has poured forth in a mighty

stream. The highest of these old volcanoes attain an elevation of more than 6,000 feet above sea-level.

When we cross the narrow valley on the south of these French highlands, we come to another region of plateaux, bounded on the north, however, by The Pyrenees. an unbroken chain of mountains, which rank next to the Alps among the mountains of Europe. These mountains, the Pyrenees, stretch for about 250 miles from sea to sea, along the frontier of France and Spain. In many respects they present a strong contrast to the Alps. Unlike the latter, they form only a single chain, the crest of which runs from end to end with remarkable regularity, while lateral spurs are given off at right angles with equal regularity along the whole length. There is similar uniformity in the general height of the chain. The peaks, the highest of which are a little over 11,000 feet, rise but little above the mean elevation; the depressions between them are correspondingly slight, and passes are accordingly few in number. Large lakes there are none, and the glaciers descend but a short way down the valleys, and are generally longer from side to side than from above downwards.

The rest of the peninsula of Spain and Portugal, or what is called in one word the Iberian Peninsula, is The Iberian table-lands and sierras. mainly made up of table-lands of about the height of 2,500 feet above sea-level, but rather higher in the north than in the south. But these table-lands are traversed from east to west by several mountain ranges, called by the Spaniards *sierras*, by the Portuguese *serras*, that is, 'saws,' from the saw-like aspect of their summits. The Sierra Nevada, or the

Snowy Sierra, in the extreme south, the loftiest, grandest, and most rugged of all, is almost completely isolated from the central table-land by the luxuriant valley of the Guadalquivir. Its highest peak is 500 feet higher than the loftiest of the Pyrenees.

Passing now to Italy, we there enter a peninsula which is likewise essentially mountainous, though different in character from that of Iberia.

The Apennines.

South of the wide and fertile plain watered by the Po, it is traversed from end to end by a chain of mountains called the Apennines, which begin at the south-western extremity of the Alps and sweep round to the Strait of Messina opposite Sicily. Sometimes they form a single chain, sometimes they divide into two. In many places they fill nearly the whole breadth of the peninsula, though one or two low-lying tracts of moderate width are left between them and the coast on the west side about the middle, and on the opposite side in the extreme south-east. The height of the chain is seldom above 7,000 feet, but there are at least two peaks above 9,000 feet in height about the middle of the chain towards the east side.

Equally mountainous is Sicily, in which three abrupt ranges radiate from a central nucleus to the three corners of the island, while on the east side the volcanic cone of Etna slopes gradually up to a height of nearly 11,000 feet. Sardinia is completely covered with groups of mountains, while Corsica is traversed from end to end by a lofty chain, in which some of the summits are not much inferior in height to the highest of the Apennines.

Even more mountainous than Italy and Spain is the

Balkan Peninsula, which is now divided up among so many different States. But here the highlands form as a rule neither table-lands nor mountain chains, but a confused assemblage of mountains separated by narrow valleys running in different directions, and with summits of 5,000 feet high and upwards in every part of the peninsula. Almost the only mountain ranges are the Balkans proper, running from east to west between Bulgaria and Eastern Roumelia, and the Dinaric Alps, which stretch south-westwards between the Austrian territory of Dalmatia and the nominally Turkish province of Bosnia.

One other portion of the highlands of Southern Europe still remains to be described—that, namely, which lies between the Alps and the South German highlands, on the one hand, and the Balkan Peninsula on the other.

In the north-west of this region lies Bohemia, a lozenge-shaped plateau enclosed by mountains of no great height. Farther to the south-east lie the Carpathian Mountains, the most extensive mountain system in Europe after the Alps. Describing a great curve of nearly 900 miles in length, they sweep round from the north to the east of Hungary, thus partly enclosing the great plain watered by the middle course of the Danube and its tributaries. At both extremities they send out towards this plain numerous intercrossing branches, those in the north filling the north-west of Hungary, while those in the east, where they are frequently intersected by tremendous gorges, occupy the whole of the territory known as Transylvania. The middle portion of the curve, between the

south-east of Galicia and the upper valley of the Theiss, is both narrower and lower than either of the agglomerations of mountains at the extremities. No part of the system, however, is very high. The precipitous Tatra in the north of Hungary has no point more than 8,700 feet in height, and this is the highest range in all the Carpathians.

All the rest of Europe, except the frontier mountains of Russia, belongs to the great plain, which thus embraces almost all the west of France to the very base of the Pyrenees, the greater part of Belgium, the whole of Holland and Denmark, North Germany, and almost all Russia. Though dotted here and there with a few isolated hills and low ranges, this plain is in general only gently rolling, and even the so-called Valdai Hills in the west of Russia, though they attain an elevation of more than 1,000 feet, slope downwards so gradually that they scarcely disturb the uniformity of the scene. In the extreme south-east, towards the Caspian Sea, the plain even sinks below sea-level. On the north-east the plain is bounded for 1,200 miles by the Ural Mountains, a range seldom exceeding 5,000 feet in height. The south-eastern frontier range of the Caucasus, on the other hand, contains peaks more than 3,000 feet higher than the highest of the Alps.

LESSON VI.

EUROPE, VI.

RIVERS AND LAKES.

FROM its comparatively small size and its highly irregular outline, Europe cannot possess such mighty rivers as the most important of those which traverse the other continents. The longest rivers are naturally to be found in the east, where the great Russian plain allows room for their development. The longest of all, and that which drains by far the largest basin, is the Volga, which, according to the lowest estimate, is only a little short of 2,000 miles in length, and drains a basin more than six times the size of Great Britain. Even a single tributary of this river, the Kama, drains an area equal to that of France, while both it and the Oka, another tributary of the Volga, as well as several other independent Russian streams, exceed in length, and still more in the area of their basins, almost all the rivers of Western Europe. The Don, flowing into the Sea of Azof, the Dnieper and Dniester into the Black Sea, and the Petchora into the Arctic Ocean, are all longer than any of the rivers beyond the limits of Russia, except only the Danube.

This last river, which drains the area between the mountains of South Germany and the Carpathians, on the one hand, and the Alps and the Balkan Peninsula, on the other hand, is the next river to the Volga in point of length and in size of

The Volga
and other
great rivers
of Russia.

The Danube.

basin, and even surpasses it in the amount of water which it conveys to the sea. Its basin is little more than half that of the Volga, but is fully half as much again as the area of France.

Of the other rivers of Europe, the most important are the Po in Italy; the Ebro and Guadalquivir in Spain; the Tagus and the Douro in Spain and Portugal; the Garonne, Loire, and Seine in France; the Rhine in Switzerland, Germany, and Holland; the Elbe and the Oder in Germany (the former rising in Bohemia); the Vistula, partly in Russia and partly in Germany. The Neva, though a very short stream, drains a large basin, including Lakes Ladoga and Onega, and is hence wide and deep, and discharges a great volume of water.

While the rivers of Europe are inferior to those of other continents as regards length, still more inferior are they when compared with these in respect of the facilities they afford for navigation.

The Volga and its tributaries afford indeed an important system of inland navigation for Russia, but then the main stream falls into an inland sea, and thus does not serve as a means of communication with the outer world. The Don is navigable for 600 miles above its mouth, but it is a very shallow stream, and flows into a very shallow sea. The Dnieper, the Bug, and the Dniester are all navigable, but all have the navigation impeded by rapids, and the last has a bar at its mouth capable of being crossed only by light craft.

A similar hindrance to navigation exists in the case of the Danube. This river begins to be navigable for steamers at Ratisbon, 1,500 miles above its mouth, and

The other
principal
rivers of
Europe.

Naviga-
bility of
European
rivers.

its tributaries, the Save, the Drave, and the Theiss, can likewise be ascended by steamers for many miles, but the navigation of the main stream is greatly impeded by two obstructions, one above and one below the influx of these great tributaries. The former occurs just where the river enters Hungary, where it breaks up into a number of branches, which keep constantly shifting their position among the mud- and sand-banks. The latter is what is known as the Iron Gate, which lies just above the point where the Danube begins to form the southern boundary of Roumania. Here a jagged rocky ledge crosses the stream so near the surface, that at low water the river is converted into a tumultuous cataract, quite impassable for merchant vessels.

Of the other rivers of Europe the most important by far as navigable streams are the Rhine and the Elbe, both of which are navigated by thousands of vessels.

But it must not be forgotten that the rivers of Europe, though insignificant when compared with those of other continents, when we think only of the length of inland navigation which they afford, are often of great importance to commerce from the fact that their estuaries form admirable natural harbours and seaports. It is this that gives value to the Tagus and the Douro in Portugal; the Garonne and the Seine in France; the Weser, the Oder, the Vistula, and the Memel, besides the Elbe, in Germany; the Western Dwina and the Neva in Russia, as well as to many of the British rivers.

Compared with other continents, Europe is less

The obstructions to navigation in the course of the Danube.

Importance of the numerous estuaries.

deficient in lakes than in rivers. The largest are in North-western Russia and Scandinavia, while those of the Alps are next in size. And here it may be mentioned that, with regard to the size of lakes or of any other prominent physical feature, there is one thing that should be borne in mind. You should always think of them as they appear on the map of Europe, not as they are shown on the maps of individual countries. For countries of different size, like Scandinavia and Switzerland, are very often drawn on maps of the same size, and hence on different scales. The lakes of Switzerland are thus made to appear relatively larger, those of Scandinavia relatively smaller, than they are, and you may, in consequence, come to think of the Lake of Geneva as being about as large as any lake in Sweden. The truth is, however, that Lake Wetter, the smaller of the two great lakes of Sweden, is about three and a half times as large as the Lake of Geneva; while Lake Ladoga in Russia, which is just about 7,000 square miles in area, is nearly three times as large as Lake Wener, the larger of the two great Swedish lakes. Next in size to Lake Ladoga are Lakes Onega, Peipus, and Saima in Russia and Finland, and Lake Mälär in Sweden.

All fresh-water lakes are drained by rivers, and in regions liable to floods are of great service in regulating the course of their outlets, and protecting the country below from inundation. When the upper districts are flooded, the lakes have their level raised and so allow the surplus waters to be drawn off gradually.

Lakes that have no outlet are always salt, but of

these there are not many in Europe, and such as do exist are all small. They are situated in an arid salt steppe on the north-west of the Caspian Sea, Salt lakes. between the rivers Volga and Ural. The waters of the Caspian Sea itself, the largest inland sea in the world, are brackish.

LESSON. VII.

EUROPE, VII.

CLIMATE.

By the term 'climate' is meant the kind of weather that prevails in any country or district from season to Meaning of the term 'climate.' season. It may be hot or cold, moist or dry, clear or cloudy and foggy, equable or subject to extremes.

Now the character of the climate of Europe is partly determined by the fact that it lies almost wholly within Causes of equable climate of Europe. the temperate zone. It is thus so far equable that it is mostly free from the extreme cold experienced within the frigid zone and the extreme heat of the tropics. Still there is always a difference between the temperature of summer and that of winter, and that difference is greater as a rule the farther we go north.

But Europe enjoys another advantage which makes the climate of a large portion of it much more equable The effect of the adjacent seas. than it would otherwise be. This advantage consists in its having so extensive a coast-line washed by the Atlantic Ocean, and in having that

coast-line in the west. The ocean has always a moderating effect on the climate of the neighbouring parts of the land. Its waters are less readily warmed in summer and cooled in winter, and hence in summer they tend to keep the winds cool and in winter to keep them mild, and when these winds blow from the ocean to the land they carry to the land their own temperature.

The effect of south-west winds and warm sea currents.

But in the northern hemisphere the moderating effect of the ocean is always most felt on the western coasts. On coasts so situated the prevailing winds are from the south-west—that is, they blow from warmer parts of the ocean, and on that account bring with them a higher temperature. Moreover, the shores of North-western Europe have their winter temperature mitigated by yet another cause. They are exposed to the action of warm ocean currents from the south-west, and above all to what is called the Gulf Stream. Wherever such currents exist in the ocean they serve to keep up the temperature of the winds, so that the latter do not lose so much warmth as when they blow over colder seas. And so it happens that on reaching the land the prevailing winds of the north-western shores of Europe are in winter very much warmer than winds usually are in latitudes so far from the equator.

In our own islands we enjoy the benefit of this situation in a peculiarly high degree. It is for this reason that the month of December with us is often as mild as September or May. But perhaps this benefit is even more striking on the coasts of Norway. It is there that the land advances farthest within the Arctic Circle, and where accordingly we should expect to find

the greatest cold. Yet the sea on these coasts is never frozen, so that steamers are able to sail to Hammerfest, near the North Cape, all the year round.

Hence it happens that throughout a great part of Europe the difference between the summer and winter

Difference between East and West. temperature increases more as we go eastwards than as we go northwards. It is in Russia that we have the greatest extremes of summer heat and winter cold, but the difference in this respect begins to be felt long before we reach Russia. Even in the west of the North German plain certain plants, such as the whin and the holly, that are met with almost everywhere in England, will not grow because the winters are too severe. The summers are there much warmer than in England, but the winters are colder.

In the countries of Europe bordering on the Mediterranean we do not observe the same differences of climate as we go eastwards, but these countries have so much peculiar to them in other respects also, that a separate account of them will be given in a future lesson.

The rainfall of Europe is greatly affected by the same south-westerly winds that have so much influence upon the temperature. It is these winds that The rainfall of Europe. bring to the continent the greatest amount of moisture from the grand source of all moisture, the ocean; and the rainiest regions are those which are most exposed to these winds, and especially where the land is high.

All the moisture in the air does not fall as rain, snow, or hail, or even become visible as mist. The air

can at all times contain a certain amount of moisture in such a state that it can neither be seen nor felt, and the warmer the air is the more it can retain in this form. But the higher we ascend in the atmosphere the colder does it become, and hence when winds blow against mountain sides, and are thus forced to ascend to colder regions, the moisture which they carry up with them is very apt to be condensed and allowed to fall as rain.

It is for this reason that the mountainous coasts of Europe exposed to south-west winds receive so much more rain than other parts of the continent.

The effect of mountains.

It is for this reason, for example, that the west coast of Norway receives about twice as much rain as the western parts of Great Britain, and that these again are much wetter than the eastern parts of the same island. Even at a considerable distance from the sea, mountain ranges running from north-west to south-east, and hence at right angles to the south-west winds, which thus blow directly against them, have an exceptionally high rainfall on the side exposed to the wind, and are correspondingly dry on the other side. In this position, you will remember, are the Hartz Mountains, which are renowned throughout Germany for their mists and rains. From their highest peak is often to be seen what is called 'the spectre of the Brocken,' which is nothing else than the magnified image of a person standing on the summit projected in certain states of the atmosphere on the opposite mists.

The farther from the sea, that is, the farther east, we go, the less does the annual rainfall become, and this is especially so in the south-east, which is the driest

part of Europe. The whole of the plain bordering on the Caspian is an arid desert, and even as far west as the Sea of Azof rain falls but rarely, and when it does fall it descends in deluges which may be followed by weeks of absolute drought. The comparatively small volume of such large rivers as the Volga and Don is thus accounted for, and it is from the same cause that you will see the map of Russia in this part so thinly sprinkled with the names of towns.

The driest
region of
Europe.

the Sea of Azof rain falls but rarely, and when it does fall it descends in deluges which may

LESSON VIII.

EUROPE, VIII.

PRODUCTIONS.

IN considering the productions of any part of the world, it is important to observe one grand distinction. On the one hand, we have articles used as food and as what is called *raw* material, and on the other hand we have *manufactured* articles. By raw material is meant whatever is used in making something else, as cotton fibre, or, as it is generally termed, raw cotton, which is used in making cotton yarn and cotton cloth. But under the same head may be included coal, from which we derive the power used to work our machinery.

The importance of observing this grand distinction in the kind of products lies in the fact that it throws

much light on the occupations and condition of a people to know whether they are mainly producers of food and raw material, or of manufactured articles. And when we compare the continent of Europe as a whole with other continents it is interesting to note that it is to a larger extent than any other a manufacturing continent. It sends its manufactures to all parts of the world, while it obtains its raw material in a large measure from beyond its own borders.

This pre-eminence in manufactures is partly due to the fact that the continent of Europe is abundantly supplied with the two most essential of all raw materials, iron and coal—iron to make the machinery, and coal to drive it. It is where these two minerals are found together, as they very often are, that manufactures are most highly developed. It is so not only in our own country, but also in Belgium (as around Liège, &c.) and in the adjoining parts of the north of France (around Lille), in the valley of the Rhone in France (around St. Etienne and Lyons), in the valleys of the Ruhr and the Wupper, tributaries of the Rhine in Western Prussia, in the south of Silesia, another Prussian province, and in Bohemia. In Spain and Sweden iron is also abundant, but coal being deficient, manufactures are not so extensively developed.

But the pre-eminence which Europe enjoys in manufactures is largely due also to its geographical configuration. Its varied outline, which places it, as explained in a former lesson, so readily in communication with all other parts of the world, affords it peculiar facilities for obtaining the needful raw materials from

The pre-
eminence
of Europe
in manu-
factures.

those parts of the world where they are produced in excess, and distributing to other parts of the world the manufactured goods. From America, India, and Egypt it obtains raw cotton, from Australia and New Zealand and elsewhere wool, from China and India silk, all articles easy of transport, and these are exported again when converted into woven fabrics. Hence it is in the western part of Europe that manufactures predominate, while the more uniform East furnishes chiefly raw produce.

Among all the manufactured articles produced in Europe, cotton goods take the foremost place, and next after these come woollen, linen, and hempen fabrics, together with various kinds of articles in metal; all these are produced chiefly in the localities already indicated. Silks are manufactured mostly in France, Switzerland, and Northern Italy. Articles in leather, india-rubber, and various other materials are produced in many places, and in fact there is scarcely any kind of manufacture carried on in any part of the world which Europe does not pursue.

The raw produce of the continent is likewise very varied. The most important products under this head are the grains from which we derive the chief food for ourselves and our cattle. The raw produce of Europe. Wheat, oats, and barley are the principal grains, but in many parts of the mainland rye also takes an important place (in some the chief place) among them; in the warmer parts maize is added to the list, and in one or two places in the south even rice. Altogether, however, the grain which Europe produces is not enough for its own wants, so large is the population

supporting itself by manufacturing industry. Most countries in Europe are compelled to import corn, and the only parts of the continent that regularly export this commodity are Russia, Roumania, Bulgaria, Thessaly (in Greece), Hungary, and North Germany.

Among the products of European agriculture next in importance to grain is wine, which is largely grown in France and other warmer countries of the continent. What are called industrial plants—that is, plants yielding substances used in manufactures—are also very extensively grown. Among these may be mentioned flax, yielding the fibre from which linen is made, and hemp, both largely cultivated in Central and Eastern Europe; hops, used in making beer; beet, used in making sugar; rape and other seeds, yielding oil; madder, which yields a red dye, now to a large extent superseded by dyeing materials obtained from coal; tobacco; in some parts of the south, even cotton. To these may also be added silk, since the production of this fibre depends on the growth of the mulberry tree, on the leaves of which the silkworm feeds. The mulberry tree is grown in many parts of Southern Europe.

The familiar fruits of our own country are grown in all the temperate parts of Europe, the apple in the exceptionally mild climate of Western Norway even to within a degree and a half of the Arctic circle. Farther south, chestnuts, almonds, and walnuts are added to the number; and still farther south, oranges, citrons, and lemons, and the other so-called southern fruits, which will be noticed more particularly in the lesson on the Mediterranean region.

The chief timber countries of Europe are Scandinavia, Russia, South Germany, and Austria, the first supplying mainly pine and fir wood, or, as it is called in commerce, deal.

Among domestic animals, besides those familiar in our own country, there are numerous mules in Spain and the southern countries, as well as in France; camels in South-eastern Russia; buffaloes in Hungary, the Balkan Peninsula, Spain, and Italy; reindeer in the far north; goats in all the mountainous countries of the south, especially in Greece. The waters of the northern seas and rivers yield abundance of herring, cod, and salmon; those of the Mediterranean, abundance of tunnies, anchovies, and sardines, besides coral and sponges.

The mineral kingdom is likewise a great source of wealth for the continent of Europe. Besides the two important minerals already mentioned, Europe produces all the ordinary as well as the so-called precious metals, namely, gold and silver. Of these latter, the first is found chiefly in Russia, in the Ural Mountains, though also to a large extent in Austria-Hungary. Silver is most largely produced in Norway and Spain. Platinum is confined to Russia. Of the ordinary metals, copper is most abundant in Germany, Spain, and Russia, besides our own country, lead in Spain and Germany, tin nowhere more abundantly than in the south-west of England, zinc chiefly in Belgium and Prussia, quicksilver most plentifully in Spain; and besides these metals, manganese, antimony, nickel, cobalt, and bismuth are all produced in greater or less quantity. Salt is obtained abundantly in most countries, and sulphur

in great quantity in Sicily and some parts of the Italian mainland. Inexhaustible supplies of petroleum exist in the Eastern Carpathians, but they have not yet been sufficiently utilised.

LESSON IX.

PEOPLE OF EUROPE.

In a previous Reader you have already been told something about the three principal races of Asia and Europe. These three are the Aryan, the Semitic, and the Mongol. In Europe the first of the three is by far the most numerous, and occupies by far the largest area. Language being taken as the chief guide in forming an estimate, it has been calculated that about thirteen-fourteenths of the present population of Europe belong to this great race.

The three
great races
of Europe
and Asia.

A study of the languages spoken in Europe has also enabled scholars to distinguish several leading branches of these races, and in Europe the branches of the Aryan race are those which have most interest for us. The main branches of that race which have been thus distinguished are five in number. These are the Keltic, the Greek and Latin (forming one branch), the Teutonic, the Lithuanian, and the Slavonic.

The
branches of
the Aryan
race.

But when we say that language has enabled scholars to make out these subdivisions of the Aryan race, we must be careful to note what language can teach us

and what it cannot teach us on this subject. Above all we must observe that the numbers of the people speaking languages belonging to the five branches or families above mentioned cannot be taken as indicating the proportion of the inhabitants of Europe descended from the stocks by which these languages were originally spoken. In the course of time the different branches of the Aryan race have got variously intermingled with one another, so that not one of them is pure and entirely descended from people speaking a language allied to that which they now speak. And, moreover, whole nations have in many cases come to adopt languages not originally their own. Languages derived from the Latin, for example, are now spoken not only by the people of Italy, but also by the people of Spain and Portugal, France and Roumania. But the reason of that is that in ancient times Rome, the centre of the Latin language, was so powerful, that the people of Rome were able to impose their own language on a great many subject nations, just as English-speaking people at the present day are causing our language to be spread among a great variety of nationalities in Asia, America, and elsewhere.

But while language gives us little clue to the proportion now representing the original branches of the Aryan race, it does teach us something, and something of importance on this subject. It teaches us that there must have been at least so many branches, and from the distribution of the languages at the present day and in historic times we may draw certain conclusions as to the order in which they settled in Europe,

What language teaches and what it cannot teach as to these branches.

and even as to the route by which they entered our continent.

You have already learned that the earliest forefathers of the Aryans dwelt in Asia. Now there is reason to believe that in coming thence into Europe the different branches followed different routes. It seems probable that the Kelts and the Greeks and Latins entered by the south through Asia Minor. The Kelts came first, and were gradually pushed westwards to the shores of the Atlantic, and now their language is spoken only by a comparatively small number of people in the West of France (Brittany), in Wales, Ireland, and the Highlands of Scotland.

The other three branches of the Aryan race appear to have followed a more northerly route through Russia, and of these the Teutons came first, the Lithuanians next, and finally the Slavs. It was principally the advance of the Teutons that displaced the Kelts from regions occupied by them in Western Europe and forced them on to the extreme limit of the continent; and it is important for us to bear in mind that the language spoken by the English people belongs to the Teutonic family, to which also belong the languages spoken by the Germans, Danes, Scandinavians, and Dutch.

The Lithuanians are known to have been at one time widespread in Russia, but now their language is confined to a small area on the south-east of the Baltic. That language is of great interest, however, inasmuch as it preserves some forms of speech that must have been among the very oldest used by Aryan peoples.

Slavonic languages are now spoken throughout the

greater part of Russia, as well as by large numbers of people in Germany, Austria, and the Balkan Peninsula.

Of the inhabitants of Europe who are not Aryan, the oldest beyond doubt are the Basques, a small remnant now found in France and Spain round the western extremity of the Pyrenees. They speak a language quite unlike any that is known elsewhere.

The
Basques.



KALMUCK (MONGOL) BELONGING TO THE SOUTH-EAST OF RUSSIA.

The Mongoloid race is represented by a few Finns and Lapps in the extreme north of Europe, by the Magyars who settled in Hungary in the ninth century, by the Turks who entered the Balkan Peninsula in the fifteenth century, and by several widespread but not very numerous tribes in the south and east of Russia.

The Mongo-
loid race in
Europe.

Lastly, the Semitic race is represented by the Jews, who are distinguished not by their language, but chiefly by their religion. They are scattered among all the nations of Europe, and speak the language of the people among whom they happen to be settled. Most of them are to be found in the midst of people speaking either Slavonic or Teutonic languages.

The Semitic
race in
Europe -
The Jews.

The various countries of Europe with independent governments at the present day are far from coinciding with the distribution of the races or languages. In all large countries more than one language is spoken, and in some, such as Austria and Turkey, there are many.

Countries
and govern-
ment.

The form of government varies. In almost all cases the people make laws for themselves, through representatives whom they elect to form a Parliament or legislative assembly. Such countries are said to have a free representative government, and this government may be either a republic or a monarchy. In the former case the people themselves also elect the head of the State (generally called a president), but in the latter the head of the State is an hereditary ruler, bearing the title of king (or queen), prince, or emperor. Governments of the latter kind are called constitutional monarchies. In two cases, however, namely in Turkey and in Russia, the government is despotic—that is to say, entirely in the hands of one man, whose will is absolute.

LESSON X.

**NORWAY, SWEDEN, AND DENMARK,
WITH ICELAND AND THE FAROE ISLANDS.**

THESE three kingdoms have long been more or less associated in history, and their inhabitants still speak languages closely allied to one another. The Norwegian, indeed, may be considered as a dialect of the Danish, which is the language generally spoken in Norway by the upper classes. At the present day, all these countries are separate constitutional monarchies, but Norway and Sweden are united in the same way as England and Scotland were before the union of the Parliaments in 1707. They have the same sovereign, but each of them has a Parliament of its own.

Norway consists of that narrower strip of the Scandinavian peninsula which lies mainly to the west of the water-parting. It is almost entirely a country of mountains, with a wild rocky coast indented by long, narrow, steep-sided inlets, known as *fjords*, and fringed by innumerable rocky islands large and small.

The Norwe-
gian coast.

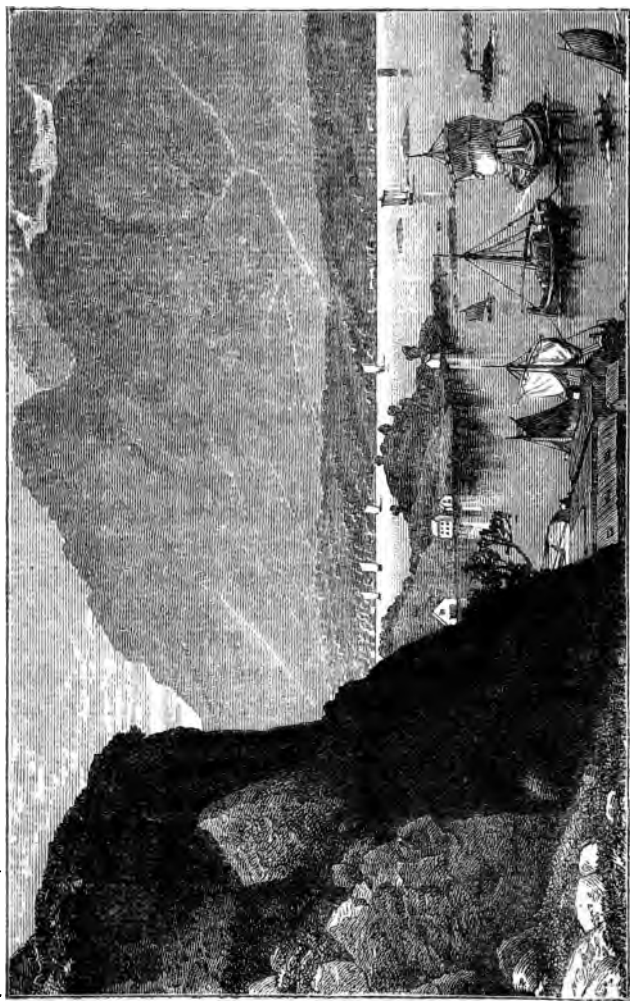
Too mountainous for agriculture, and deficient in the materials for manufacturing industry, Norway has always been essentially a country of sea-farers. In olden times these Norwegian seamen, known in history as Vikings, made themselves renowned far and wide by their daring voyages and descents upon maritime countries. They

Occupations
of the Nor-
wegian
people.

repeatedly plundered the English and the French : some of them settled and gave name to Normandy in France, and thus were the ancestors of the Normans who conquered England about the same time as another band of Normans founded a kingdom in Sicily and Southern Italy.

The Norwegians are nowadays as great seafarers as ever. Their abundant forests supply them with material for building ships, and the amount of shipping owned in Norway is even greater in proportion to the population than that owned in our own country. And the seamen of Norway are also great fishermen. The creeks and channels on their coasts swarm with fish—cod, herring, salmon. The first of these fish is peculiarly abundant in the waters round the Lofoten Isles in the north. When caught they are split open and laid out to dry in the sun, and during the fishing season the coasts of these islands are covered with the drying cod as far as the eye can reach. In treating the fish in this way there is one part of the entrails which the fishermen are careful to preserve. The liver is valuable, and is despatched in casks to various places on the coast, where it is boiled so as to yield the oil which is so much prized in medicine.

The centre of the herring fishery is Bergen. In the month of February, immense shoals of terrified herrings, pursued by whales, seek refuge in the narrow channels off the coast, but there they find the fishermen ready with their nets, and are caught in countless hosts. They are landed on the shores of the nearest island, and, being bought by dealers, are sent as soon-



BERGEN BAY.

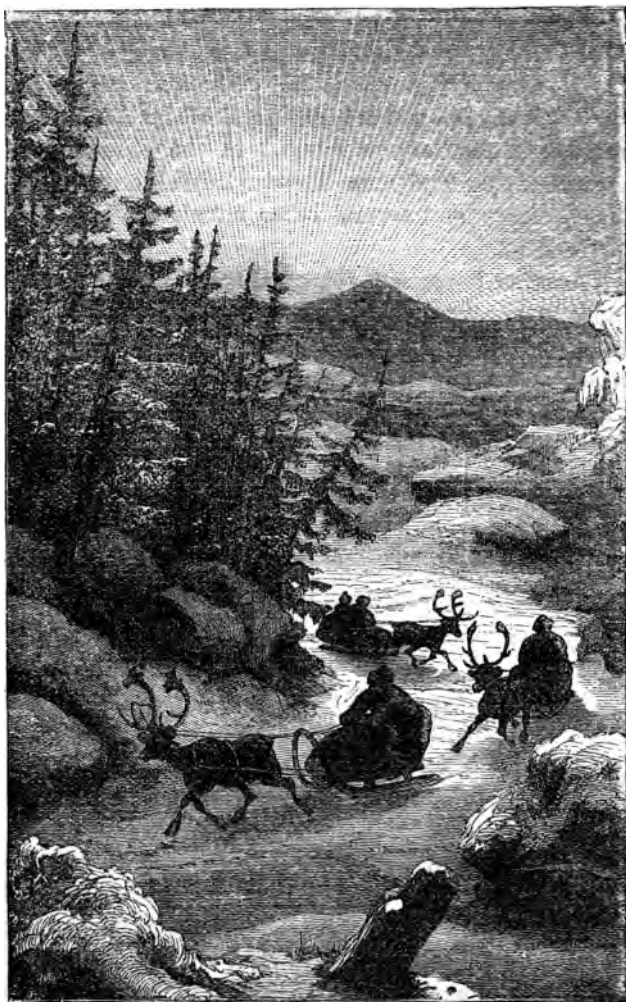
as possible to Bergen, where they are prepared for export to distant towns or foreign countries.

Of late years Norway has attracted great numbers of tourists, who come to view the grandeur of its mountain and coast scenery, to visit the enormous glaciers that descend from the table-lands of the interior, and to behold the magnificent cataracts that precipitate themselves into the fiords or over the sides of the inland ravines. Many of these tourists sail northwards within the Arctic zone, where in the height of summer the sun never sets—the Land of the Midnight Sun, as it has hence been called. But this part of the peninsula is said to be even more worthy of a visit at the opposite season of the year, when the total absence of the sun is made up for by the brilliancy of the starlight, and very frequently also by the gorgeous splendour of the Aurora Borealis or Northern Lights.

This northern part of Norway and the adjoining part of Sweden and Russia is thinly peopled by Lapps, some of whom live by fishing, while others are wholly dependent on the reindeer, which supplies them with food, drink, and clothing, and which in winter drags their sledges with great swiftness across the snow, while it is able to subsist on a lichen which it finds for itself beneath the snow.

The capital of Norway is Christiania, at the head of the fiord of the same name opening into the Skager-Rack.

Sweden contains more level land than Norway, especially in the south, the region which contains Lakes Wener and Wetter, as well as numerous smaller



LAPPS IN REINDEER SLEDGES UNDER THE LIGHT OF THE AURORA BOREALIS.

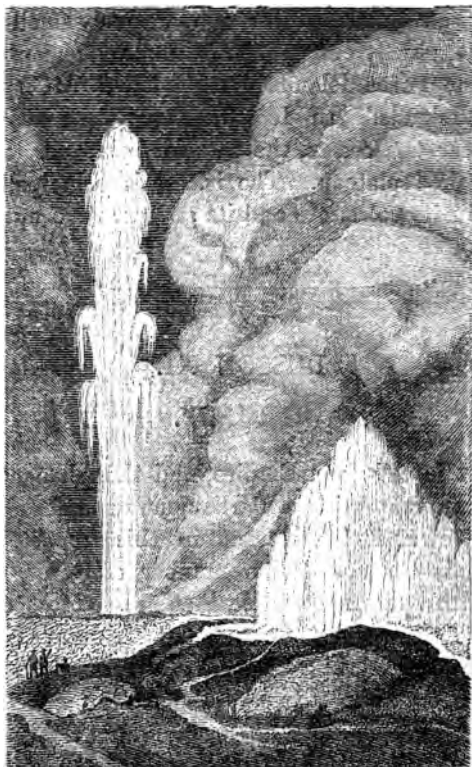
woodland lakes. This part of the peninsula is hence more suited for agriculture, and it likewise contains more mineral wealth. The iron ores of Denmark and some other localities are of great value, and are largely smelted in the country. The ores of copper and zinc likewise furnish occupation to many miners, and several other metals are also found in Sweden.

Another important source of wealth and support of industry consists in the forests, which are even more extensive than those of Norway, being estimated to cover about two-fifths of the entire surface. The timber is not only used for shipbuilding, but a large amount is exported; much of it is cut up into boards and laths, and is also used to make the matches with which we have become so familiar in our own country in recent years.

The capital of the country is Stockholm, which is very picturesquely situated, partly on the mainland, partly on a number of islands at the entrance to Lake Mälär.

Denmark, the smallest of these three kingdoms, is very different in its physical aspect from either of the other two. Both the peninsula of Jutland and the islands may be considered as forming part of the great European plain. The peninsula is for the most part bleak and barren, especially on the west side, where there are numerous long chains of sand-dunes, and it is altogether more suitable for pasture than for agriculture. The islands, on the other hand, contain much excellent corn-land, and are inhabited by an industrious race of farmers, many of whom own the

and which they till. The capital of the country is Copenhagen, on the east side of the island of Zealand;



GEYSERS IN ERUPTION (ICELAND).

; the narrowest part of the strait called the Sound.
; is one of the chief ports on the Baltic.

To Denmark belongs also the large island of Iceland

(more than twice as large as Denmark itself), together with the Faroe Islands, lying midway between Iceland and the Shetland Isles. Both of these Iceland and the Faroe Islands. are inhabited by a comparatively small number of people, chiefly engaged in fishing and sheep-rearing. The name Faroe Islands (in Danish *Fär Öer*) means 'Sheep Islands.' In Iceland the people are chiefly found near the coasts, the interior being for the most part a naked plateau. The island is principally celebrated for its volcanoes and its geysers or eruptive hot springs.

LESSON XI.

GERMANY.

GERMANY is called an Empire, and though a constitutional monarchy with a Parliament somewhat like our own, it is different in this respect, that it Government. is composed of a number of states, each of which manages its own local affairs. Most of these states are themselves monarchies with separate Parliaments or councils, but a few have a republican form of government. The rulers of the different monarchies are called in some cases kings, in others dukes, grand-dukes, and princes. The largest of the states of which Germany is composed is Prussia, and the Emperor of Germany is at the same time King of Prussia; while Berlin, the capital of the Prussian kingdom, is likewise the capital of the whole Empire, the city in which the Imperial Parliament holds its sittings.

You have already learnt in the second lesson that Germany consists physically of an extensive plain in the north and east, and a region of plateaux, mountains, and valleys in the south. This causes the climate to be pretty uniform in temperature over its whole extent, for the rise in height towards the south neutralises the benefit of increased warmth that would result from approaching nearer the equator.

The valleys, however, are all the warmer through having the shelter of the mountains, which protect them from cold winds, and the hill slopes near the bottom of the valleys are in many cases warmer still from the fact that they are directly exposed to the rays of the sun. The broadest of these valleys is that of the Rhine, between the Vosges and the Black Forest, and this is one of the warmest and driest parts of Germany. It is here that such products as wine and tobacco are chiefly grown, but wine is also largely grown in some of the broader valleys belonging to other streams in the Rhine basin, such as those of the Main and the Neckar. The vineyards there clothe all the sunny hill slopes, and on the banks of the Rhine itself they are found also far below the valley just spoken of. When the grapes are ripe, these vineyards add much to the beauty of this valley, which is so often visited and so greatly admired on account of its picturesque heights and the romantic ruins by which so many of them are crowned.

In North Germany and in the higher parts of the south the products of agriculture are pretty much the same as in our own country. Yet the principal grain grown in these parts is one little

known with us, namely, rye, though along with rye is grown abundance of wheat. The Germans likewise grow a great deal more flax than we do, and also produce much beet for the making of sugar. In the warmer parts of the south there is an increasing production of maize, a grain with which we are familiar enough on our quays and wharves, but do not see in our fields.

In the west of Germany, where coal and iron are plentiful, manufactures are carried on to a very large extent. The Prussian Province of the Rhine (so called because it lies on both sides of that river) is indeed one of the busiest manufacturing districts in the world. The two large towns of Barmen and Elberfeld produce great quantities of silk and cotton goods, as well as mixed fabrics—that is to say, cloths composed partly of one material, partly of another. The town of Aix-la-Chapelle, or, as the Germans call it, *Aachen*, in the same province, manufactures much woollen cloth; and Cologne, famous among other things for its cathedral and the scent that takes its name from the town, is also a busy manufacturing centre.

Manufactures are also largely carried on in the kingdom of Saxony and in the Prussian province of Silesia, where coal is found, and there also many other minerals, including a great variety of metallic ores, are produced. The metals are chiefly obtained from the south of Saxony, from the mountains called the *Erzgebirge*, which means Ore Mountains, a name which they owe to their mineral wealth.

Among the other manufacturing places of South Germany is the old town of Nuremberg, in the kingdom

of Bavaria. It is here that most of the wooden toys sold in our toy-shops are made, and there are some large wholesale shops in the town that deal entirely in a single article, such as lead soldiers or bricks for building toy houses. It is a curious town in another way also, for the houses are in many cases very old and in an ancient style of building, with their gable ends turned to the street, and each story projecting a little beyond the story beneath.

In some respects the city of Leipzig in the northern part of the kingdom of Saxony is the most important town in Germany, although not a third of Leipzig and its fairs. the size of Liverpool or Manchester. It is above all noted for its fairs, which are the largest of the fairs still held in Western Europe. They are held three times a year, but the chief one is the Easter fair, which may be attended by from 25,000 to 30,000 traders. The large and handsome square in the centre of the town is then crowded with booths set up as temporary shops. The ground-floors of almost the entire town seem to be converted into a vast store for goods. The streets swarm with men and horses, with carts, carriages, and every kind of vehicle. All the dialects of Germany are heard spoken, and strangers are present from Russia and England, France and Italy, Greece, Turkey, and Roumania—in short, from nearly all the countries of Europe. For furs Leipzig is the principal market in the world, and among other articles of commerce at the Leipzig fairs are yarns and woven fabrics of every description, drugs and spices, coffee, chocolate, wool, grain, cattle, and at the Easter fair more particularly books. Leipzig is the centre of the



NUREMBERG.

German book trade, and the Easter fair is attended by representatives of about three thousand firms belonging to this business alone.

The town next in size to Berlin in Germany is Hamburg, at the mouth of the Elbe, the principal
The Free
Towns. seaport in the Empire. It is called a free town, and it and the other two seaports of Bremen and Lübeck, the former near the mouth of the Weser, and the latter on the Trave near the Baltic, are the three republics belonging to the German Empire. They are sometimes called Hanse Towns, because they are the last independent survivors of the Hansa, a league or confederacy of trading towns, which, during the middle ages, when governments were less strong than they are now, had banded themselves together for their mutual protection and to advance their own interests. Lübeck, which is now the most insignificant of the three survivors, was at that time the most influential, and the town still possesses among its buildings several handsome relics of its former splendour.

Like Liverpool, Hamburg now carries on a large trade with New York, and despatches many emigrants thither. The estuary of the Elbe below the town is difficult to navigate, and gets rapidly encumbered with sandbanks, so that dredging-machines have to be constantly at work to keep a course clear for large vessels.

LESSON XII.

SWITZERLAND.

SWITZERLAND is above all other countries in Europe a land of mountains, and it is as such that it is famous in history, and as such that it is visited every year by great crowds of tourists from the rest of Europe and from America. Though the highlands of Switzerland are not on so extensive a scale as those of Scandinavia, though its glaciers are not so vast, its waterfalls not so high, its ravines not so profound, yet its snow-clad mountains are much loftier than those of the northern peninsula, and its rugged and sublime scenery is associated with a much more luxuriant vegetation in the valleys below, so that the landscapes of Switzerland present to view a combination of grandeur and beauty unparalleled elsewhere in Europe. Few scenes are more likely to dwell in the memory of the spectator than those in which he may see on one side magnificent lakes spread out in a smiling valley, while there rises on the other side a jagged range of snowy mountains; and the sight is even more impressive when, on the evening of a moist summer day, the setting sun suffuses the mountain-tops with a rich rosy red reflected with varying brilliancy from snow and ice, from naked crag and rocky pinnacle. It is not every visitor to Switzerland that is fortunate enough to behold such a sight; but when one has the good fortune to witness an Alpine glow, as it is called, it is an occasion not to be forgotten.

But it would be a mistake to suppose that Switzerland is merely a country of grand and picturesque scenery. It is a country which illustrates Energy and enterprise of the people. better perhaps than any other in Europe the extent to which industry, intelligence, and education will enable a people to triumph over natural disadvantages.



CHAMOIS OF THE ALPS (SEE APPENDIX).

The mountains are great hindrances to communication, and the rivers of Switzerland are almost all too rapid and too shallow to be of much use for navigation. Yet the foreign commerce of Switzerland is even higher in value in proportion to the population than that of the United Kingdom.

This perhaps is not so remarkable a fact as it looks, for since the country is surrounded on all sides by foreign countries, every article of commerce that is carried a few miles across the frontiers makes part of its foreign trade.

But the fact just mentioned does not give the whole truth as to the foreign trade of this little country. It is necessary to add that the products of Swiss industry are sent to the remotest lands, to America and to China. Though poorly supplied with coal and compelled to bring the raw materials for manufacture long distances overland, Switzerland yet manages to compete with more favourably-situated countries in various manufacturing industries. The ribbons of Bâle or Basel have a world-wide reputation; the silks of Zürich are the rivals of those of Lyons; cotton yarns and cotton cloths are manufactured on a great scale in many places in the north-east; and many of the cotton fabrics which ultimately reach the remotest markets are printed and dyed in the division of Glarus in the very heart of the mountains.

What enables Switzerland thus to compete with other countries in manufactures is partly the fact that it can make up for its deficiency in coal by employing the water-power afforded by its rapid mountain torrents. But probably it owes its success still more to the encouragement given to education. At Zürich, on the lake of the same name, there is one of the best-equipped technical schools in Europe, a school in which students are taught everything connected with manufactures, as well as agriculture, forestry, building, and engineering.

Besides the manufactures in which machinery is used, Switzerland excels also in several handicrafts carried on on a smaller scale. The chief of these is watch-making, which has long been pursued not only in the town of Geneva, from which Geneva watches take their name, but also in one of the retired valleys of the Jura, where most of the so-called Geneva watches are made.

But though manufactures and handicrafts are what chiefly make the industry of the Swiss famous, the people are just as diligent and careful in the cultivation of their fields and the tending of their flocks and herds. The plain or plateau watered by the Aar between the Jura and the Alps is admirably cultivated, and it is only because so many of the people support themselves by manufactures that the country does not produce corn enough to supply its own wants. Besides corn much wine and fruit are grown in certain districts. But the only agricultural product that Switzerland is able to export is cheese. Great numbers of cattle are reared in Switzerland, both in the valleys and, in the summer, on the lower parts of the mountains, what the Swiss call the 'Fore-Alps.' Most of the milk obtained from the cows is made into cheese, and about a third of all this cheese is exported. Many different kinds are made, some very peculiar and hardly known except in Switzerland, but that which we are most familiar with in this country is the very large kind called Gruyère, which takes its name from a town in one of the western valleys.

The Swiss people do not all speak one language. The greater number of them speak German, but in the



CHALET OR HUT OF AN ALPINE HERDSMAN.

outh-west French is spoken, in the south Italian, and in the south-east a small number of the people speak a language of their own, which is one of the corruptions of the ancient Latin.

The government is peculiar. The form of government is republican, but the country is called a Confederacy, being composed of a number of little states called 'cantons,' which are leagued or confederated together for their common good. The Parliament of the country represents all the cantons together, and deals with all matters of common interest. But each of the cantons has a government of its own to manage its local affairs. In most of them there is a separate Parliament, but in some of the smaller ones the people govern themselves in a way no longer practised in any other civilised country in the world. In these there is no Parliament, but at certain periods of the year all the grown-up men of the canton assemble together to elect their own rulers, and to make their own laws by a show of hands.

The capital of Switzerland is Bern, which stands on a platform on the left bank of the river Aar. Though politically the capital, being the place of assembly of the Parliament of the Confederacy, it is not the largest or richest town in the country. In these respects it is surpassed by Zürich, Geneva, and Bâle. Zürich with its suburbs, which extend for several miles along both banks of the lake to which it gives name, is the most populous town in Switzerland, though containing less than 100,000 inhabitants. The small towns of Lucerne and Interlaken are noted as being the chief resorts of strangers who come to see the beauties of Switzerland.

Near the former, on the north side of the Lake of Lucerne, stands the Rigi, a celebrated mountain which is frequently ascended for the sake of the magnificent view its summit commands. One may even ascend this mountain by railway, the carriages having toothed wheels fitting into rack-rails.

LESSON XIII.

AUSTRIA-HUNGARY.

OF all the great States of Europe, Austria is the one that has the shortest length of coast-line. It is estimated to have nearly 200 square miles of surface for every mile of coast belonging to the mainland, while in our own island there are no more than seventeen miles of area for every mile of coast. The fact is that there is only a small corner in the north of the Adriatic Sea that is of great importance to Austria for its commerce with foreign lands by sea. But in that corner there is a seaport which is of all the more consequence to Austria because it is without a rival. This is the seaport of Trieste. Trieste, the headquarters of a famous shipping company known as the Austrian Lloyd's. Its trade is chiefly with the Levant—that is, the region in the east of the Mediterranean, the region of the Rising Sun.

But Trieste is also an important place of trade with our own country. It is here that Austria receives great

quantities of the articles which we manufacture, and here that she sends out to us, above all, grain and flour.

Austria is, indeed, one of the great granaries of Europe. By that is meant that it produces much more corn than it requires for its own people, so that it is able to supply the wants of other countries less rich, comparatively speaking, in this product; and it is important to remember this, not only because the fact is an interesting one in itself, but also because the region where most of this corn is grown is so peculiar as to deserve description.

The grain
production
of the Em-
pire.

The region referred to is the great plain of Hungary, enclosed by the Alps and the Carpathians, and watered by the Danube and some of its great tributaries. Wholly unlike anything that has yet been described, this plain cannot but appear peculiarly strange to any one accustomed to English scenery. Imagine a region more than half the size of England and Wales, in which almost the entire surface seems to be a dead level, varied only by hills of sand heaped up here and there by the wind, and liable in the same way to be again dispersed, in which scarcely any trees are to be seen, and in which stones are even rarer. Such are the main outlines of the picture presented by the Hungarian *pusztas*.

The Hun-
garian *pus-
tas*.

But to help one to realise the scene a few more details must be added. In most parts the soil is fertile, and there in early summer the surface is covered as far as the eye can reach with hedgeless fields of wheat and maize swaying before the wind. In other parts the soil is sandy, and these districts present the appearance of a desert; while in others rich pastures are grazed by

herds of cattle and troops of horses. In consequence of the want of stone, wood, and other road-making material, hardly any roads exist. Such roads as we do meet with are mostly mere tracks marked out by the wheels of carts and carriages, and in winter they become almost impassable, so that the market towns, which, though large, are few and far between, must take in their winter supplies during the summer.

At all seasons of the year the aspect of these boundless plains is dreary and monotonous, but most of all in late summer and autumn, when the fields are cleared of their corn, and everything becomes burnt up under the constant glare of the sun shining day after day in a cloudless sky. The vegetation almost entirely disappears, or becomes reduced to patches of coarse grass covering the ground at intervals; and so unbroken is the level of the plain that the most conspicuous objects are the rods and poles beside the deep wells which are sunk in all parts of the region in order that the inhabitants may draw their necessary supplies of water. At night the scene becomes more striking from the number of fires that are lighted up all round to keep the herdsmen warm. For, as in other dry regions where the days are warm, the nights are cold; and the herdsman of the *pusstas* might say, as Jacob said of Padan-aram, 'In the day the drought consumed me, and the frost by night.'

Other parts of the Austrian dominions present a complete contrast to these Hungarian plains. In the west the scenery is like that of Switzerland, and there are rugged mountains with profound valleys among the Carpathians, both in the

The mountainous parts of the Empire.

north and east. On the north-east of the Carpathians the surface sinks in Galicia to plains, as rich in corn as those of Hungary, but not presenting an aspect so peculiar.

Vienna, the capital of the Empire, lies in the west on the Danube, on a small plain overlooked by grassy and wooded hills. It is a handsome town, and one of the largest in Europe, now containing more than a million of inhabitants. Next in size is Pest, or Buda-

Vienna and
other chief
towns.

Pest, the principal town on the Hungarian plains; and the third is Prague, capital of the province of Bohemia, in the north-west. This

Manufac-
tures.

province is the chief manufacturing region in the Austrian dominions. It has the most important supplies of coal and iron as well as other minerals, and among its manufactures we may mention that of glass, which is well known in this country, from the fact of Bohemian glass being so largely used for ornamental purposes.

Austria, like Germany, is a country in which there are minor Parliaments for local affairs as well as great Parliaments for the general affairs of the Empire, but the system of government is even more complicated in Austria than in Germany.

Govern-
ment.

The population of the Empire is a very mixed one. The people in the west are chiefly of German origin and speak the German language, but elsewhere the majority of the people are Slavs. Besides Slavs and Germans, however, many other races are found in large numbers. The dominant race in Hungary is that of the Magyars, of whom mention was made in the ninth lesson; and in addition to these there are numerous Jews, Roumanians, Italians, and others. Altogether the Ger-

People.

mans make up little more than one-fourth of the entire population of the Austrian dominions, while the Slavs amount to not much less than half, and the Magyars



INHABITANTS OF TYROL (AUSTRIAN ALPS).

about one-sixth. About one-tenth of the people in Hungary and Galicia are Jews, and they are in both provinces the chief traders and money-lenders,

LESSON XIV.

BELGIUM AND HOLLAND.

THESE two countries, long known as the Low Countries, have had a very chequered history, and now form two separate constitutional monarchies, bearing in this country the names at the head of the lesson. The people of Holland themselves, however, call their country the kingdom of the Netherlands—that is, the Low Lands—and their country is in fact the lowest part of the area. A large part of it is even below the level of the sea, but the land gradually rises towards the south and east until in the south-east of Belgium it attains an elevation that entitles it to the name of a table-land.

The lowest parts of the country both in Holland and Belgium have been rescued from the sea, and have to be maintained against it. This is done by means of high embankments known as dykes, which intersect the country in various directions, and enclose tracts of land called *polders*. From the way in which they are formed these polders can have no natural drainage, and have accordingly to be freed by artificial means from the water that falls on their surface. They must, in fact, be constantly pumped dry; and to keep the pumping-machines going the Dutch take advantage of the wind-power with which nature has provided them, as the Swiss take advantage of the water-power which they enjoy. The wind blows from the sea over their flat land with a steadiness not known in countries

Dykes and
polders.

where the surface is more varied, and it is used to drive hosts of windmills planted along the dykes, and employed to keep pumps in motion. And the same kind of force is employed to do all kinds of work in Holland—to grind flour, coffee, chocolate, to beat flax, to spin yarn, to weave cloth, and perform other operations.

But it is not merely the sea against which the people of Holland have to contend. The overflowing
Rivers in
the Low
Countries. of the rivers is even more to be dreaded than the inroads of the sea. The Meuse or Maas, and the various branches of the Rhine, which here form so intricate a network, bring down from the interior of the continent great quantities of mud, which sinks to the bottom in the sluggish part of the river courses. Their bed is thus raised higher and higher, their surface is brought always nearer to the tops of the embankments, so that the Dutch have to keep raising their dykes to protect their polders against floods.

But while the rivers are a danger to Holland they are in another way an immense advantage. Their height above much of the land makes it peculiarly easy to feed deep canals by their means, and all the chief dykes have canals as well as roads running along them. Such canals are numerous in the very cities. Holland, in short, is a country of canals and windmills. In Amsterdam, the commercial capital of the country, canals are almost as numerous as streets, and windmills are more plentiful than tall chimneys in one of our large manufacturing towns. Even at the Hague, the political capital of the country, canals, though less numerous, are a striking feature, and they are no less so at Rotterdam, the great port on the Maas.

The chief use to which the polders are put is the rearing of cattle; and dairy produce, principally butter and cheese, is what Holland supplies most abundantly to other countries from its own resources. The Dutch are not a manufacturing people, but, on the other hand, are great merchants. They have large possessions in the East Indies, with which

Produce of
the polders.



SCENE IN AMSTERDAM.

they carry on an extensive commerce, bringing home coffee, sugar, rice, indigo, spices, &c., much of which they sell to other countries. In proportion to the population, the value of the foreign trade of the Dutch is much greater, in fact, than that of any other country in Europe, including our own.

The chief occupations of the people in Belgium contrast with those of the Dutch both in town and country. The Belgian peasants are not so much rearers of live stock as growers of corn and other products of the soil. Nowhere in the world, indeed, is the ground more carefully utilised than in Belgium, while in many of the large towns, such as Ghent, Liège, Malines, Brussels, &c., the manufacturers of linen, wool, and cotton, of machinery and articles in metal, are the rivals of those of Great Britain. The locomotives, the fine linens, and the laces of Belgium are particularly celebrated.

The carrying on of these great industries is favoured, as in our own country, by the presence of coal and iron beneath the surface in great abundance. Belgium possesses rich coalfields, occupying about one-twentieth part of its surface, and the amount of coal they produce is not only sufficient to supply all its own needs, but even to leave about one-third over every year for export.

The consequence of having its soil so carefully cultivated, and its manufacturing industries so highly developed, is that the country is more populous in proportion to its extent than any other country in Europe, and, indeed, in the world. The number of inhabitants to the square mile is not far short of 500, which is about 200 more than in the British Isles.

Important as many of the towns of Belgium still are, some of them were formerly even more important.

During what are called the Middle Ages, manufactures and commerce were more advanced here than in any other part of Europe, and its

Occupations
of the people
in Belgium.

Chief towns.

great towns were correspondingly rich, populous, and splendid. Till about 1500, Ghent is believed to have been the most populous city in Europe. About the same time Liège was as populous as Paris. Antwerp, at the mouth of the Scheldt, still the chief seaport in Belgium, or, indeed, anywhere on the mainland of Europe, was three hundred years ago the chief seat of commerce in the world. These are consequently in a certain sense decayed cities, flourishing though they are, and there are others in the country which, though formerly famous, have had no revival in modern times. The most interesting of these is Bruges, which attained the height of its prosperity in the course of the thirteenth century. It was then the head of the Flemish Hansa, a league of merchant towns in the Netherlands like that of the German Hansa in Central Europe, and as such it was one of the great markets of the then known world. Now it looks like a deserted city, and contains only monuments of its former glory.

The capital of Belgium is Brussels, a town of more modern growth than any of the others already mentioned.

The people of Belgium are of two quite different nations. Some of them are of German stock and speak a language very like the Dutch. These are Walloons, and Flemings, called Flemings, and their language Flemish. The others are called Walloons, and speak French, which is the language of the upper classes generally.

LESSON XV.

FRANCE.

FRANCE is a republic, lying, on the one hand, between the Atlantic Ocean and the Mediterranean Sea, and, on the other hand, between the Iberian Peninsula and the mainland of Europe. It is bounded for the most part either by the sea or by mountains. Only on the north is the frontier quite unmarked by any physical feature.

From what was said in Lesson V., you have learnt that France is mainly a land of plateaux and mountains in the east and of plains in the west. The peninsula of Brittany in the extreme west has, indeed, a rugged and rather unfruitful surface, but it is by no means high, not many of its elevations exceeding 1,000 feet above sea-level.

Almost all the rest of the country is level or rolling land, and in the south-west, between the Pyrenees and the river Garonne, there is a remarkably level tract, with a flat coast bordered by sand-dunes.

This region is called the Landes, and at one time consisted mainly of marshes. It consequently supported only a very scanty population, and the few who did live here, chiefly shepherds, mostly presented a singular appearance; for they walked about these marshy plains mounted on high stilts, by means of which they were not only able to traverse the soft ground with wonderful rapidity, but also to see greater distances while tending their flocks. But most of these marshes have now

General
physical
features.

The Landes.

been drained. The region has thereby been rendered more productive, and these curious figures in the landscape have become rarer.

The fact that the French highlands lie so far from the sea allows the rivers that flow from them across the plains to develop into considerable streams with a gentle current in the lower tracts of country. They are hence of great importance for inland navigation, more especially the Loire, the Seine, and the Marne, a tributary of the Seine. The Garonne is not navigable for large vessels, but the long estuary of the Gironde, belonging to that river and the Dordogne, makes Bordeaux at its head a very important seaport. The Rhone can be navigated by large vessels from Lyon to its mouth, but is too rapid to be easily ascended.

The French people are very industrious tillers of the ground, and in most cases they own the land which they cultivate. The most productive parts of the country are naturally to be found in the plains. The peninsula of Normandy in the north-west is famous for its corn and cattle, as well as for its apples and cyder, and the rich valley of the Garonne in the south-west is equally famous for its wine.

The grain crops of France are similar to those of our own country. As with us, wheat is the principal, and barley and oats are also largely grown, but on the poor soils the French grow a great deal of rye, and in the warmer parts some maize. But besides grain, potatoes, and the ordinary green crops, the French cultivators also produce much beet for making sugar, rape and other seeds yielding oil, hemp, and other

articles. In the Mediterranean region the olive thrives and silkworms are reared.

But the product for which France is famous above all others is its wine. France is the greatest producer of wine in the world, and wine is one of her principal exports. This product cannot be grown everywhere. The vine thrives only in those parts which have a much warmer summer than any part of our country. The district in the south-west already mentioned is that which produces the wine which in this country is called *claret*, and Bordeaux is the seaport whence that wine is exported. In the north-east are produced the more highly-esteemed wines of Champagne and Burgundy, which take their names from the old provinces situated in the districts where they are made—namely, those watered by the Upper Marne and Upper Aube, and by the Saône, a gently-flowing tributary of the Rhone.

The manufactures of France are as important as the products of its soil, and in one branch of manufacture, that of silk, France stands foremost. The chief seat of this manufacture is Lyon, or, as it is often called in English, Lyons, a large town at the junction of the Rhone and Saône. It is the birthplace of Jacquard, the inventor of a very ingenious loom for weaving figured patterns, an invention which greatly advanced the manufacturing industry of his native city. As a manufacturing centre, this city has the advantage of standing, not only at the junction of two great rivers, but also in the neighbourhood of a valuable coalfield. From St. Etienne in the centre of this coalfield it obtains its supplies of coal, and

French
wine.

Manufac-
tures.

Lyon and
St. Etienne.

since this town stands higher than Lyon, the coal-trains are able to descend to the latter town, thirty miles off, by their own weight.

Besides those already mentioned, France has many large and famous cities. Most renowned of all is Paris, the capital, which ranks next after London in point of population among the cities of the world. It stands on both banks of the Seine where that river is joined by the Marne, and as a city is distinguished by its numerous fine buildings and handsome bridges, its gardens and parks. Unlike any of our own cities, it is surrounded by a fortified wall, and likewise defended by a large number of forts on all sides. It is in every respect the most important city in France, and it is the great centre of fashion, elegance, and luxury for all Europe, and indeed for the whole civilised world.

The second town in size is Lyon, and next after it comes Marseilles, the principal French seaport. It lies on the south coast, and is probably the oldest city in the country, having been founded by an ancient Greek colony several centuries before Christ. Many other towns in the same part of France date at least from the time of the Romans, who brought this part of the country under their rule much earlier than any other part. As a Roman territory it received the name of 'the Province,' in Latin *Provincia*, whence it came afterwards to have the French name of Provence, by which it is still very commonly known. In many of the old Roman towns of this quarter are preserved remains of works constructed under Roman rule. The town and neighbourhood of Nîmes are especially rich

in these antiquities, the most striking of which, perhaps, are the remains of a magnificent aqueduct, now known as the Pont du Gard.

The most important of the towns of Northern France is Lille, the seat of extensive linen and cotton manufactures.

LESSON XVI.

THE PENINSULAS ON THE MEDITERRANEAN.

THE countries in Europe bordering on the Mediterranean are in some respects so different from the rest of the continent, and have so much in common with one another, that it is worth while to consider them first together.

The very fact that the shores of these countries are washed by a wide and deep sea like the Mediterranean, Situation and surroundings. totally different, you will remember, from the shallow sea that separates Scandinavia from Central Europe, is in itself an important point to note. But it is no less important to observe that all these countries are shut off on the north by a nearly continuous barrier of mountains. The Pyrenees shut off Spain from France, the Alps separate Italy from Central Europe, and the mountains in the north of the Balkan

Peninsula serve in the same way as a barrier for the southern parts of that peninsula.

Effect of these circumstances on climate.

Temperature.

These two circumstances together have a very important influence on the climate of the Mediterranean countries. You know already that the ocean always has a remarkably equal-

ising effect upon temperature—that is to say, it reduces the difference between the temperature of winter and of summer. Now the Mediterranean, being wide and deep, acts much in the same way.

But so too does the mountain barrier that we have just spoken of. You must bear in mind that in the northern hemisphere cold winds generally blow more or less from the north. They blow from colder latitudes to warmer ones, and lower the temperature of the latter. But it is just these north winds from which the countries to the south of the barrier are sheltered, and hence these countries are all protected from extreme winter cold. As soon as you get beyond the shelter of that barrier you find that the winter cold becomes greater. If you look at the map you will see that Constantinople has nothing to protect it from the north-east winds that blow over the plains of Russia and the Black Sea. Here accordingly the average temperature of January, the coldest month of the year, is about ten degrees lower than that of Naples, which lies in nearly the same latitude; and for that reason the olive will not grow at Constantinople, though it thrives everywhere on the European shores of the Mediterranean and the *Ægean* Sea. If we go still farther east and farther north we come to a narrow strip in the Crimea where sheltering mountains do exist, and there the olive again appears along with other plants of the Mediterranean region.

But that is not the only difference between the climate of the Mediterranean region and that of the rest of Europe. There is a great difference too as to the rainfall. The Mediterranean

Rainfall.

region is remarkable for its dry summers, and the farther south we go the less is the amount of rain that falls during that period of the year. This absence of summer rain, however, is chiefly felt in the lower parts. You have been already told of the effect of mountains in causing the air to condense its moisture, and hence the mountains of northern and middle Italy and the greater part of the Balkan Peninsula have abundant rains even in summer, while their coasts are very dry.

Of this summer drought there is one consequence that might naturally be expected. The rivers of the countries of which we are speaking have very little water in summer compared with what they have during the rest of the year, and especially in winter. Many even dry up altogether in summer. To the south of the fortieth parallel of latitude—that is, in the southern half of Spain, the extreme south of Italy, and the whole of Greece—the rivers that flow all the year round are comparatively few in number.

For that among other reasons the rivers of the Mediterranean region are generally of very little use for navigation, but they are all the more largely taken advantage of for another purpose—namely, to supply the surrounding country with the moisture of which, during the rainless summers, it stands so much in need. Channels are led from the rivers on both sides often to a great distance, and in this way the water of rivers that might otherwise have flowed constantly is in some cases all used up before they reach the sea. This method of watering the land is what is called irrigation.

The rivers
of the Medi-
terranean
region.

The use of
the rivers
for irriga-
tion.

From what has now been said you will understand that the chief distinctions of the Mediterranean climate, at least in the lower part of the land, are its mild winters and dry and warm summers, and it is to be expected that these differences should



COCHINEAL CACTUS.

have the effect of giving to this region a peculiar vegetation. The vegetation of this part of Europe is indeed peculiar in more ways than one.

In the first place, this region, on account of its warmth, is the domain of southern fruits. It is the region of the orange, the citron, and the lemon, of figs, mulberries, and pomegranates, the olive and the locust-tree; it is the region, moreover, of the laurel and the myrtle, and even of the date-palm and the cochineal

cactus. Rice, cotton, and the sugar-cane can also be grown in certain parts.

But the vegetation of the Mediterranean lands is noteworthy for another reason. It is unlike that of the rest of Europe in the time of year at which the vegetation flourishes. In Northern Europe the period at which vegetation is at a standstill is winter, in Southern Europe it is summer, the time of drought. The summer over, grasses and herbs again appear in autumn, and these are followed by a whole host of winter plants, which in the extreme south bloom right on till March. Then succeeds the richest vegetation of the whole year. The fruit-trees then again become covered with leaves and gay with blossoms, and the earth becomes strewn with innumerable crowds of lilies of all kinds besides other brilliantly-coloured plants.

And one other peculiarity must be noticed, a peculiarity in the way in which the trees and shrubs adapt themselves to this period of summer repose. The characteristic trees and shrubs of this region are evergreens, but not evergreens like our narrow-leaved firs and pines. They are evergreens with broad, thick, juicy, and leathery leaves like the holly, the laurel, and the myrtle. In summer the vegetation in these also is at a standstill. The leaves grow no larger, and no young leaves are put forth ; but their thick juicy texture preserves them from perishing from drought, and new leaves are put forth again in autumn when the ground becomes once more green with herbs and grasses.

The evergreens of the Mediterranean countries.

LESSON XVII.

THE IBERIAN PENINSULA—SPAIN AND PORTUGAL.

THE peninsula separated from France by the Pyrenees is now, as it long has been, divided between two States, both at present constitutional monarchies.

The physical features, which are peculiar, have already been described in Lesson V. You will remember that the whole peninsula is in the main a country of plateaux and mountains, but the edge of the plateaux is more broken in upon by plains and valleys in the west, where most of the chief rivers fall into the sea, than in the east.

Now it ought also to be remembered that this physical structure has a very important effect upon its climate. It is chiefly due to this cause that Spain is as a whole the driest country in Europe. In the last lesson you were told that it was characteristic of the southern parts of all the countries on the Mediterranean to have a very dry and indeed almost rainless summer; but in Spain and Portugal this drought extends not merely over the south, but embraces by far the larger portion of the peninsula. The broad tablelands are parched by the sun's rays, and the air becomes so warm that all the vapour it contains remains invisible and seldom gets condensed into rain. And even in winter the rains in the interior of the peninsula are peculiarly scanty. The winds then blow mainly from the interior towards the sea, and even when they do

blow inland so that they might bring moisture with them, they lose most of that moisture on the edge of the table-lands, the inner parts of which thus remain comparatively dry. Only the strip of coast on the north and the provinces in the north-west are well supplied with rain.

On the aspect of the vegetation in the peninsula this remarkable drought cannot but have a very pronounced effect. Nothing could be more dreary and desolate than the sterile table-lands of Old and New Castile. At best one sees only sheep pastures, or tracts covered with leafless grasses like the esparto, which is now used in making paper. Towards the east even these disappear, and the soil, being to a great extent charged with salt, bears only a few pale green herbs and shrubs sparsely scattered over the surface.

Fortunately one important tree is suitable even for these arid tracts. The olive, the tree referred to, is one of those the foliage of which enables it to stand long droughts, and hence it is spread over larger areas in Spain than anywhere else in Europe, forming in some places large plantations. The orange and its allies the citron and lemon, though able to stand the drought, cannot resist the winter cold of the table-lands, and are accordingly confined to the coasts.

Almost everywhere in the peninsula agriculture is dependent on irrigation, and the coast rivers, especially on the east, are very largely made use of for that purpose. For much of this the Spaniards are indebted to a people called the Moors,

Vegetation.

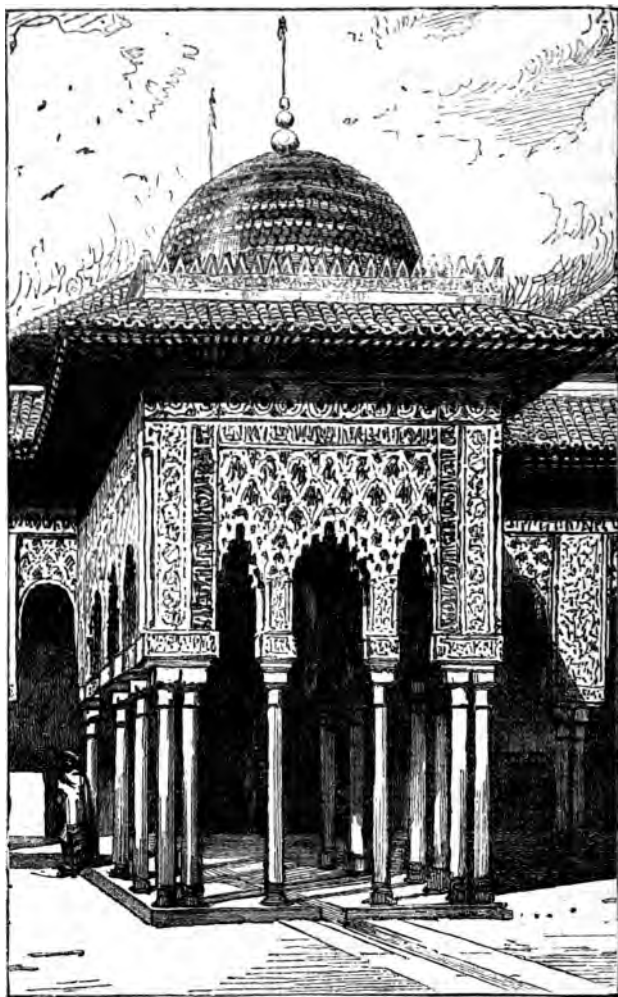
The olive.

The irrigation works of the Moors.

who crossed over into Spain from Africa, and for hundreds of years had the southern part of the country in their possession. In religion the Moors were followers of Mohammed, but at that time, from eight hundred to a thousand years ago, these Mohammedans were the most learned and most civilised people in Europe, and Spain still contains many useful works and beautiful buildings to remind us that it was once the land of the Moors. In particular it was by their hands that all the rivers in the south-east, the Segura, the Jucar, the Guadalaviar, and others, were first made to be the means of blessing whole provinces with the most luxuriant fertility, enabling them to bear in rich abundance all the products mentioned in the last lesson. The canals constructed by them are still maintained, and the Spaniards now water their fields by means of Moorish water-wheels called *norias*, these wheels having attached to them buckets, which dip down into the water and empty that water into troughs, by means of which it is conveyed to the fields.

In the north-east of Spain the valley of the Ebro is made fertile by the same means, but there the irrigation canals were made by the Spaniards themselves, who were wise enough to copy the plan which they had learned from the Moors.

The products of agriculture by which Spain and Portugal are chiefly known to us are wine, grapes and raisins, oranges and other southern fruits. Agricultural products. The wine chiefly comes from the south of Spain, the rich province of Andalusia, and the north-west of Portugal, where the vineyards are principally situated on both banks of the Douro. The product of



PART OF THE ALHAMBRA, A MOORISH BUILDING IN GRANADA.

the latter is exported from the town of Oporto, which stands very picturesquely on rising ground at the mouth of the Douro. From that town the wine takes the name of *port*. The Spanish wine, again, is called in English *sherry*, a corruption of Jerez, the place in which the trade in it is mainly carried on. It is chiefly exported from Cadiz. From Malaga, farther east, a sweeter kind of Spanish wine is exported, but more to America and the West Indies than to Europe. Two other towns in Spain are well known in this country in connection with the trade in southern fruits. These are Seville, which stands on the Guadalquivir at the highest point to which that river is navigated, and is famous for its oranges; and Almeria, on the east coast, chiefly famous for its grapes.

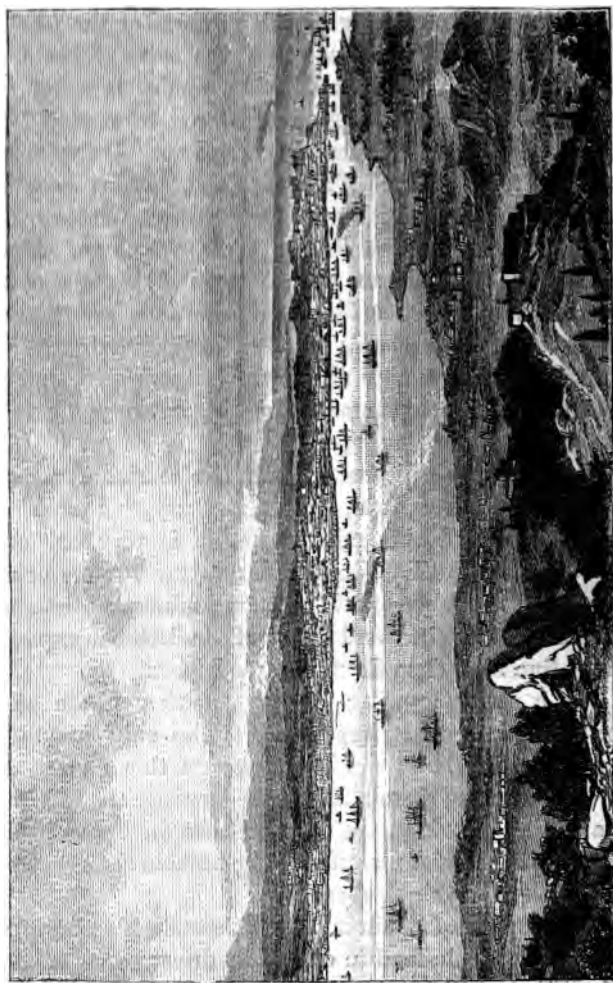
Besides wine and fruits Spain is also rich in minerals, especially lead, iron, copper, mercury, and sulphure, but this mineral wealth is very far from being utilised to its full extent. Pyrites however is very largely worked. Among minerals Portugal is famous for pyrites and salt: of the latter it exports a very fine kind from Setubal, near Lisbon.

As a manufacturing country neither Spain nor Portugal is of great importance. The only province that shows much activity in this respect is that of Catalonia in the north-east. Barcelona in that province, the largest town in Spain after Madrid, is the chief manufacturing town in the country, as it is also the principal seaport.

The capital of Spain is Madrid, situated in the very heart of the table-land in one of its driest parts, so dry indeed that on an average more than one day out of

Mineral products.

Manufactures.



LIMBOW.

every three is found to be perfectly cloudless. That of Portugal is Lisbon, a beautiful city, occupying a site at the mouth of the Tagus very similar to ^{Madrid and other towns.} that occupied by Oporto at the mouth of the Douro. Of the other towns in the peninsula it is only necessary to mention Cordova and Granada, both in the valley of the Guadalquivir; and they are mentioned not



ROCK OF GIBRALTAR.

so much on account of their present importance, as for their fame in history, and on account of the relics which they still possess of their former grandeur when in the hands of the Moors. From the latter city the Moors were not driven till the close of the fifteenth century, and in it is situated the celebrated palace of the Moorish kings called the Alhambra, the most

elaborate monument of Moorish architecture anywhere to be seen.

To Spain belong the Balearic Isles, which are very similar to the mainland, and the Canary Islands, which, though lying off the coast of Africa, are looked upon as forming part of the Spanish kingdom. Similarly in the kingdom of Portugal are included the Azores, a group of islands lying far out in the Atlantic Ocean, and Madeira, off the coast of Africa.

The almost impregnable rock of Gibraltar in the extreme south of Spain, commanding the entrance to the Mediterranean, has been in the possession of Britain since 1704.

LESSON XVIII.

ITALY. (I.)

COMPARED with the other countries on the mainland of Europe, Italy is the best provided with natural boundaries. Enclosed on the north and north-west by the lofty barrier of the Alps, which shut it off from France, Switzerland, and partly from Austria, it is washed on other sides by the sea. Only in the north-east is the frontier between Italian and Austrian territory unmarked by any well-defined physical feature, and the portion of Austrian territory which there borders on Italy is inhabited by people who speak the Italian language.

We have already seen that the peninsular portion of Italy is almost covered with mountains, the Apennines,

and that the only great plain in the country is that which stretches between the Alps on the north and the Apennines on the south. Here, too, is Italy's single great river, the Po. Now you will easily understand that the river is there only because the plain is there. The waters that flow on both sides from the mountains must reach the bottom of the plain and be carried by the river to the sea. The plain thus makes the river. But it is no less true that the plain is in part made by the river, and indeed almost wholly made by the river and its tributaries.

Physical
features.

The Po
basin.

You have already read in a previous year how rivers carry down pebbles, sand, and mud from the higher grounds, and make new land by laying them down at lower levels. Of this process the plain of which we are now speaking is perhaps the best illustration to be found in Europe. If you will look at the map of Italy you will see that just at the mouth of the Po the plain juts out into the Adriatic. It does so because the land there formed is the last which has been laid down by the river itself. This jutting land is a true delta, composed of river sediment like the delta of the Nile, though not traversed by so many arms of the river as the latter. That delta shows how the river is gradually filling up the upper end of the Adriatic, and it has been found that for many, many years in modern times the delta advanced at the rate of about seventy-five yards a year. Hence towns which in the time of the ancient Romans, about two thousand years ago, stood on the shores of the Adriatic, are now situated inland, miles away from the sea. Adria, the very town from which the Adriatic

took its name, is now more than twenty miles from the mouth of the Po, and between ten and twenty miles from the coast.

We know then from history how the Po has been constantly making new land, but we know also that this process must have been going on long, long before the beginning of human history, and that in those remote times this plain must have been made by the rivers that flowed down from all parts of the mountains into what was then a great gulf of the Adriatic, as they now, after the plain has been formed, flow as tributaries into the Po.

The plain thus made by the rivers from the mountains is now the richest part of Italy. It is here that we find most of her populous cities, and the greatest proportion of her population; it is here that her manufactures are most advanced, and her agriculture most productive. Vines and fruit-trees, fields of wheat and maize, cover the land. In the richly-watered meadows round Lodi in Lombardy, six crops of hay may be obtained in the year. In some parts, where water is very abundant, even rice may be grown, as it is in Southern Spain. But there is one product of Northern Italy which must be specially noted, as it is that which feeds the most important of her manufactures. That product is silk. On the mulberry-trees of Piedmont in the north-west are reared myriads of silkworms, whose cocoons furnish abundance of silk of the finest quality. The cocoon markets in June present to view a busy scene. The peasantry arrive from all sides bringing baskets filled with this light but valuable merchandise.

Products of
the Po val-
ley.

Silkworms
and silk
manufac-
tures.

Bargaining, buying, and selling go on the whole day, and in the evening the peasants return with their earnings to their homes, while the cocoons are transferred to the stores of the silk manufacturers, who work them up into silks and velvets.

But the wealth of Italy is not confined to the north. In the south also there are great cities and fertile plains.

Southern Italy. The province of Campania round Naples has been famous from antiquity for its fertility, and here, as well as in Sicily, cotton is added to the products of the soil. But the plains of the south are comparatively small, and if you look at a map showing the railways of Italy, you will see how in this part of the country these keep in general near the coast, the mountainous inland regions being difficult to cross.

Moreover the low grounds of the south near the sea suffer in many places from a heavy scourge—namely, The malaria. the *malaria*, or poisonous air, which renders the inhabitants subject to fever. The country round Rome has long been of bad repute on this account, but many other parts less visited by strangers are equally afflicted by it. On some of the southern railways which follow the coast it is so bad that two-thirds of the persons employed on them suffer from fever every year, and that in spite of special means being taken to guard against disease. In fact, throughout the low-lying tracts in these warm parts of Europe, wherever water is allowed to stagnate, it poisons the air and renders the region almost uninhabitable, whereas if kept in motion and used to irrigate the fields, as it has been since the time of the Moors in Spain, it becomes a blessing instead of a curse.

To many Englishmen part of the coast of Northern Italy has become a great resort for the opposite reason—because in fact of its healthiness. In the north-west, round the Gulf of Genoa, the chain of the Apennines comes very close to the sea, and shelters the narrow strip of coast from cold northern winds. The climate is there in consequence peculiarly mild, and this coast has become celebrated throughout Europe under the name of the Riviera, which means simply ‘the shore’; and during the severe periods of the year the beautiful towns and villages on this coast, lying amidst olive plantations and orange groves, are chosen as the residence of hundreds of people unable to stand a raw and cold climate.

LESSON XIX.

ITALY. (II.)

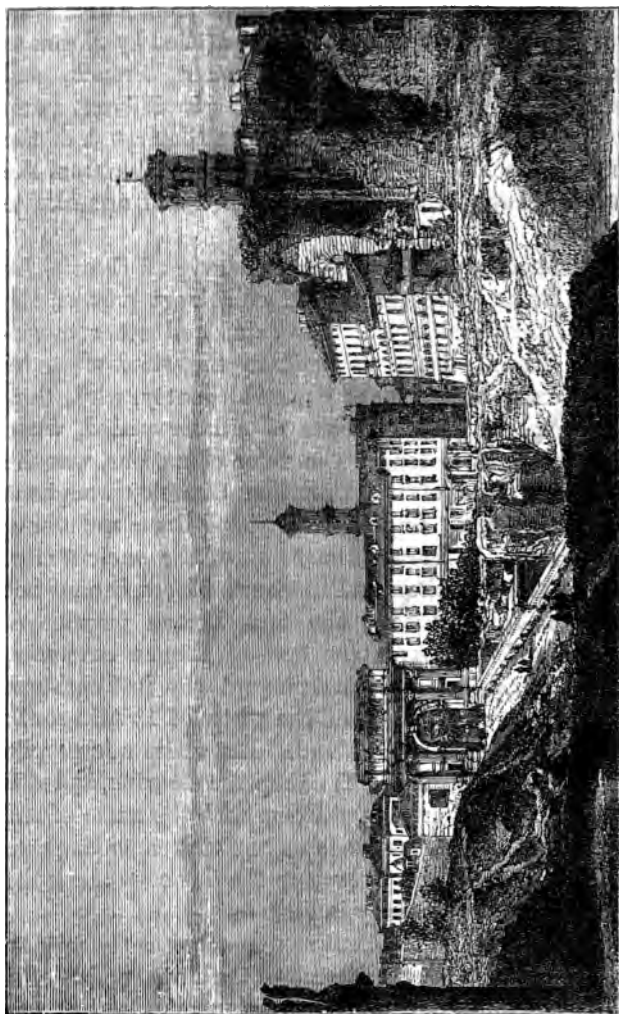
ALTHOUGH so well provided with natural boundaries, Italy is not a country that has remained more free than others from foreign masters. Its fate has indeed been exactly the opposite. From the remotest times its fertility and its fortunate situation in the middle of the Mediterranean have attracted foreign settlers to its shores. Hundreds of years before the birth of Christ it had in the south splendid cities, rivals in population of the present Liverpool and Manchester, and even perhaps of Berlin, Vienna, and Paris. These cities were founded and peopled by Greeks. Then

Greeks were followed by Carthaginians from Africa. In later times parts of the south were settled by Normans and Arabs, and after these Germans, French, and Spaniards all in turn gained a footing in different parts of the country. Even at the present day much of the interest attaching to the cities of Italy arises from the fact that they still speak of this varied and remarkable history.

Foremost in point of interest among all these cities stands Rome, once the capital of a large part of the civilised world. Its ruins and other monuments carry us back to the time when its empire extended as far as our own country, while they also reveal to us the glories of a later period, when Rome, though no longer the ruler of nations, was the recognised head of the Christian Church throughout Western Europe. Englishmen visiting Rome and seeing the ruins of the Forum, the heart of the ancient city, the seat of its markets and its courts of law, cannot but think of Julius Cæsar, the first Roman invader of Britain, and afterwards the first of Roman emperors, and of Agricola, the Roman general who just eighteen hundred years ago subdued the whole of Britain south of the mountains of Scotland. Elsewhere a huge pile built as a mausoleum by the Emperor Hadrian, and still standing as the fortress of Rome with the name of the Castle of St. Angelo, reminds us how that same Emperor built a wall from the Solway to the Tyne to mark the limit of the Roman sway in Britain.

Not far from this ancient monument rises the mighty dome of St. Peter's, the church of the Pope, which calls up other recollections. It leads us to think how it was

The cities
of Italy—
Rome.

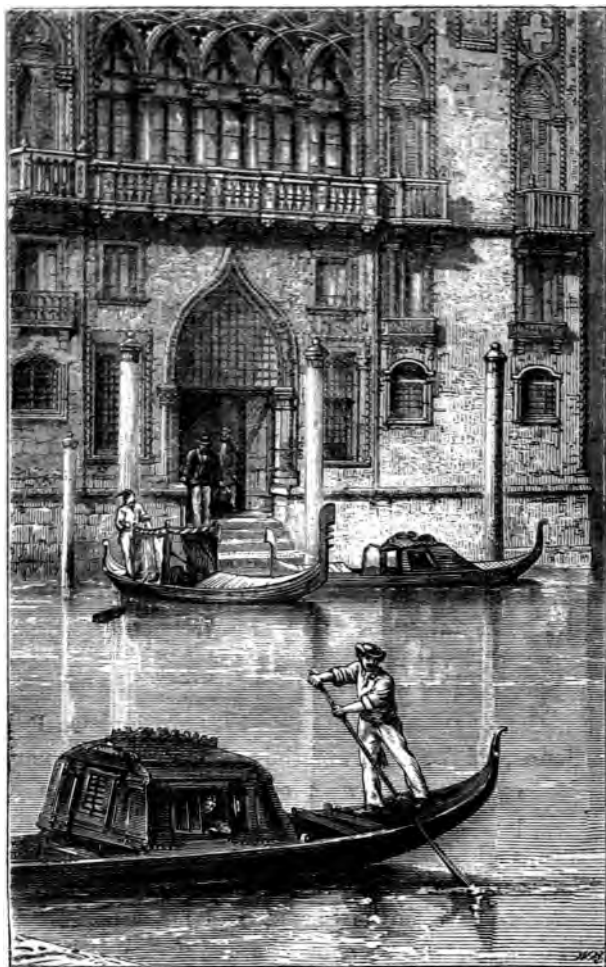


ENTRANCE TO THE FORUM (ROME).

direct from Rome that we received the monk who first converted our Anglo-Saxon ancestors to Christianity, the monk Augustine, who became the first Archbishop of Canterbury. But it also leads us to think of the time when Rome became filled with those works of art which, together with her ruins, her memories, and her skies, make this city the most attractive spot in Europe to all the civilised nations both of this continent and America, and especially to all lovers of art.

After Rome in point of interest comes Florence, a city picturesquely seated amidst hills on the banks of the Arno. Compared with Rome it is a place
 Florence. of modern growth, and its fame began no more than six or seven hundred years ago, at a time when the whole of the north of Italy was studded with independent cities, each having its own rulers and its own armies and making conquests for itself where it could in the country round. Of this period its walls still bear witness, but the chief glory of Florence is derived from its poets and painters, its architects and sculptors, whose works have almost made Florence the rival of Rome among the famous cities of Italy.

Another of these old city republics of Northern Italy was Genoa, on the shores of the gulf of the same name
 Genoa. on the north-west coast of Italy. As a republic it attained to even greater power than Florence, and six hundred years ago was the most important seat of commerce in Europe, carrying on an enormous trade with the Levant, and founding colonies and building castles even on the Black Sea. It afterwards sank in importance, but even at the present day the city of Genoa, which rises with great beauty tier

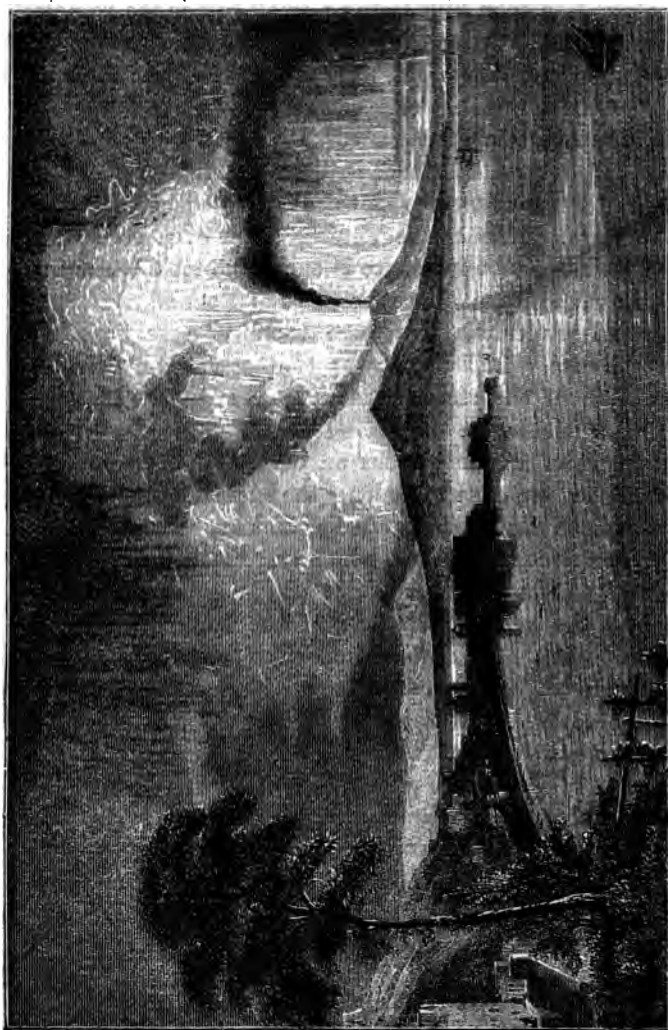


SCENE IN VENICE, SHOWING GONDOLAS.

above tier upon hills facing a small bay, is the principal seaport in Italy, and the place to which all the railways of the north converge.

On the opposite side of the peninsula, at the head of the Adriatic, stands another celebrated city, once the rival of Genoa in the trade with the Levant, and more renowned than Genoa in other respects. This city is Venice, which even on account of its external appearance is one of the most interesting cities in Europe. Like the cities of Holland, it is penetrated by canals, but here there is a very striking difference. In Dutch towns the canals run along the middle of the streets, but in Venice where there are canals there are no paved streets, and the people, instead of moving about on their feet or in wheeled vehicles, are conveyed along the main thoroughfares in a curious kind of boat called a gondola. The canals are, in fact, arms of the sea which surround the seventy or eighty little islands on which Venice is built, and which wash the very foundations of the houses and public buildings. And another important difference has to be noticed in Venice as compared with Amsterdam and Rotterdam, that while in the latter cities the buildings are commonplace, those which are mirrored on the canals of Venice are often matchless in beauty of design and richness of decoration. Enclosed within them are many of the finest works of a school of painters which made Venice renowned about three centuries ago, after it had ceased to take a leading place in the commerce of the world.

Of the other cities of Northern Italy we will mention only Pisa, which is striking on account of its decay.



MOUNT VESUVIUS IN ERUPTION.

At one time able to dispute the mastery of the sea with Genoa, it is now but a small town, the old walls of which, marking its former extent, enclose numerous cultivated fields and gardens along with various monuments of a past prosperity. In Southern Italy the chief city is Naples, the most populous town in the entire kingdom, but famous chiefly on account of the beauty of its bay and on account of its proximity to Vesuvius, the only active volcano on the mainland of Europe.

At the present day Italy is a kingdom with a representative government, and with Rome for its capital. But this has been the case only since 1871, and it is somewhat singular that this country, which seemed formed by nature to be a single state, has never till within the last few years belonged to a power which embraced its whole extent and was yet confined to its limits.

Phys.
Govern-
ment.

LESSON XX.

GREECE.

ONE of the smallest countries in Europe, little more than two-thirds of the size of Scotland, Greece is historically one of the most renowned, being unsurpassed in this respect even by Italy.

Like Scotland, Greece is a land of mountains and islands, and like it, too, the mainland is narrowed at one part by two inlets from the sea running in on opposite sides; but in Greece these inlets run much farther into the land than they do in Scotland,

Physical
features.

and they thus reduce the isthmus between them to a narrow neck of only from four to eleven miles in breadth. In ancient times the Roman Emperor Nero began to pierce a canal through this isthmus, and the same plan has again been suggested quite recently, and is now likely to be carried out.

The mountains of the mainland are much higher than those of Scotland, on an average at least twice as high. In the southern part of the mainland, called the Peninsula of the Morea, a ring of mountains surrounds an inner valley, and from this ring lofty ridges run out towards the ends of the smaller peninsulas.

These mountains are a great hindrance to the internal commerce, and hence to the industry of the country. They render it very difficult to make either roads or railways. In the whole country it is said that there are scarcely a hundred miles of roads, and there is no country in Europe which has so short a length of railway lines in proportion to its size and population.

As a consequence the Greeks are driven to carry on as much of their commerce as possible by sea, and they are, in fact, the people most given to seafaring in Southern Europe. Their shipping is relatively extensive, and a large part of the trade with the Levant is in their hands.

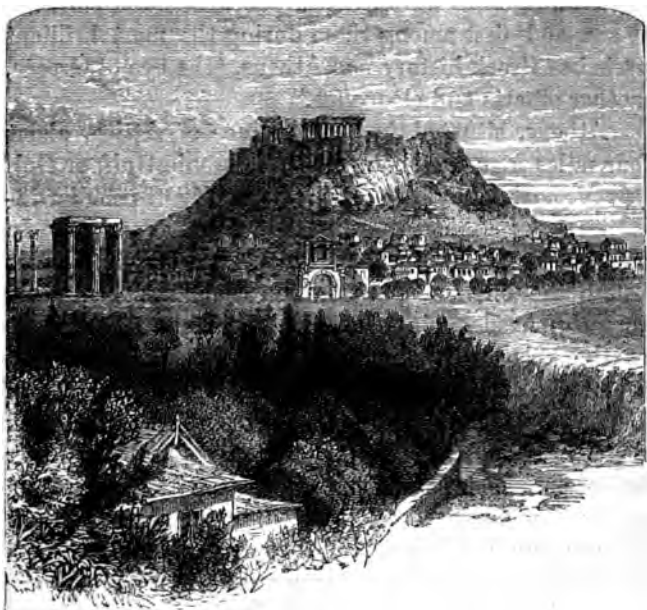
The products of their own country are in general similar to those of the other Mediterranean countries, but there is one that must be specially mentioned, because it is peculiar to Greece and forms one of the most important of her exports. This product is the currant, a small kind of raisin familiar

The mountains a hindrance to communication.

Communication by sea.

Products.

to every child. Even the name of this fruit is derived from a Greek town, for it is a corruption of Corinth, from which town this fruit was probably first derived, although now it is mostly exported from Patras.



ATHENS, WITH THE ACROPOLIS.

Currants are an important product also in the Ionian Islands, and especially in Zante, 'the flower of the Levant.'

The circumstances that cause the Greeks of the present day to be mainly a seafaring people had the

same effect in ancient times. Then, as now, the Greek cities were to a large extent shut off from one another by land, and then the chief cities were independent, as the cities of Northern Italy were six or seven hundred years ago. Hence it came about that the leading cities were those which were most powerful at sea, and first among these during the most brilliant period of Greek history was Athens, ‘the eye of Greece, mother of arts and eloquence.’

Athens, situated in the province of Attica, about four miles from the shores of the Saronic Gulf, or Gulf of Ægina, is, like Rome, a city of peculiar interest for its ruins and its memories. In ancient times, between four and five hundred years before the birth of Christ, when Rome was beginning to make head against her rivals in Italy, Athens was at the height of her power and fame. It had just taken the lead in resisting and vanquishing hosts of Persian invaders who expected to overwhelm the Greek states. Though at no time a large city—probably never half as populous as Liverpool, Manchester, or Birmingham is now—it produced or attracted to its shelter, within about a hundred years from that date, a band of poets, dramatists, historians, philosophers, orators, architects, and sculptors such as have hardly been matched and never surpassed by all the countries of Europe in subsequent centuries. The names of Plato and Aristotle among philosophers, Æschylus, Sophocles, and Euripides among dramatists, Herodotus and Thucydides among historians, Pericles among statesmen, Demosthenes among orators, Phidias and Praxiteles among sculptors, are familiar in every country of Europe and wherever

European civilisation has reached. Of this period a few magnificent relics still crown the Acropolis or citadel of Athens, and among these the most noteworthy are the ruins of the Parthenon, a marble temple dedicated to the goddess Athena, who was believed to exercise a special care over the Athenian city. It was built under the rule of Pericles, and adorned with sculptures from the hands of Phidias and probably other sculptors working under his direction. Some of the remains of these sculptures are now treasured in the British Museum in London.

In ancient times the principal rival of Athens was Sparta, in the Morea, or Peloponnesus as it was then called, but it was a rival only in war. At Sparta the arts of peace were altogether neglected, and the city can boast neither of poets nor philosophers worthy to be remembered along with those of Athens. But at Corinth and other cities in Greece itself, as well as in numerous Greek colonies scattered not only over Southern Italy, as was stated in the last lesson, but also over all the shores of the eastern part of the Mediterranean, the language, arts, and refinement of the Greeks flourished for centuries, and many of these Greek colonies outshone the cities from which they had sprung.

At the present day, Greece, after being for centuries under the sway first of the Romans, and then of the Turks, is an independent kingdom with a representative government. It gained its independence a little more than half a century ago, and its territory was extended after the close of the last European war. Of the new kingdom Athens is the capital, and it is in

other respects also the most important town in the Greek dominions. The port of Athens is now, as it was in ancient times, the Piræus.

LESSON XXI.

THE LANDS OF THE BALKAN PENINSULA.

UNDER this heading we include all the lands which still are, or which were till recently, under the power of the Turks. Among these Greece also should be included, but a separate lesson is devoted to that kingdom on account of its historical importance. The rest of the area is now occupied by various independent states, and by people either directly or to a greater or less extent under the dominion of Turkey. Roumania and Servia are independent kingdoms, both with representative governments; Montenegro is an independent principality; Bulgaria and Eastern Roumelia are principalities more or less subject to Turkey; Bosnia and Herzegovina provinces still nominally belonging to Turkey, but actually in the hands of Austria; while the rest of the territory is immediately under the government of the Turks.

The mixture of peoples in this area is as great as the variety of governments, even though several of the states and provinces above named are inhabited by people of the same race. The provinces of Bosnia and Herzegovina, the kingdom of Servia, and the principality of Montenegro are all inhabited by

Slavs, and people speaking a Slavonic tongue also form the bulk of the population in Bulgaria and Eastern Roumelia. The Roumanians speak a peculiar language descended from the Latin. In the rest of the area there are a great many Turks (especially in the east), and also numbers of Greeks and Armenians, both of whom are found as traders in all the towns, Jews, Circassians from the Caucasus, and others.

The name 'Balkan Peninsula' is derived from that of a range of mountains running east and west between Bulgaria and Eastern Roumelia; and this range forms the dividing line between two areas presenting a great contrast to each other. North of this range are extensive plains watered by large streams tributary to the Danube; elsewhere, for the most part, a mere jumble of lofty mountains and deep valleys, the latter threaded by rivers which are in general but scantily supplied with water.

But the contrast does not end here. From the nature of the case it extends to the life and occupations of the people. In the south the meagre mountain pastures support chiefly small animals like sheep and goats, while in the rich meadows of the north are reared great herds of cattle and immense numbers of horses, as well as sheep and pigs. In the south only a few valley bottoms here and there are well cultivated, while in the north, in Bulgaria and Roumania, are extensive corn-fields, forming one of the richest granaries in Europe. In the south, again, we are in the region of the southern fruits spoken of in the lesson on the Mediterranean countries, while in the north the fruits grown are generally those of Central

The contrast
north and
south of the
Balkans.

The con-
trast in pro-
ducts.

Europe, such as apples, peaches, walnuts, &c., but above all a great abundance of cherries and plums. Finally, in the south wood is so scarce that dry cow-dung forms the ordinary fuel, while in the north the forests seem almost inexhaustible.



GENERAL VIEW OF CONSTANTINOPLE.

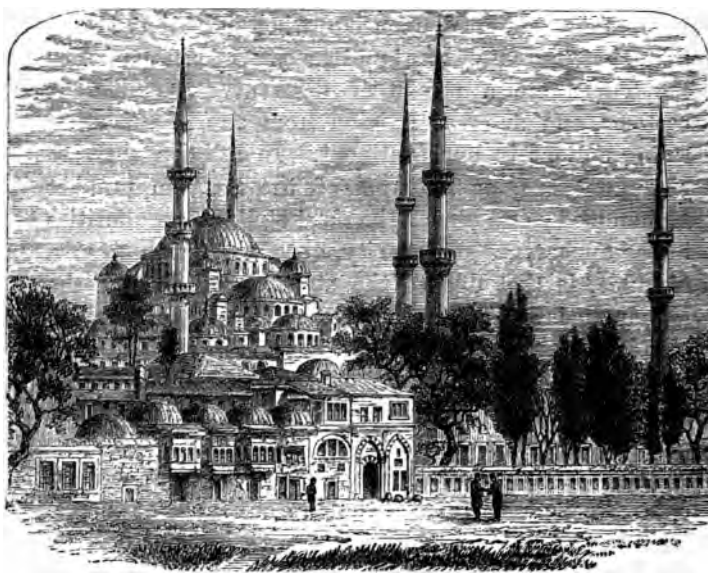
As might be expected from the nature of the surface, railways are here not very numerous, though relatively more abundant in Roumania than in the mountainous region to the south. Communication is in general as difficult as it is in Greece, and trade accordingly is in a backward condition.

Of the cities of the Balkan Peninsula there is one that all must have heard of, and which, from its situation, must always be one of the most important in Europe. This city is Constantinople, which stands at the eastern end of the Sea of

Marmora, on the narrow channel of the Bosphorus, which here separates Europe from Asia. There it was founded by a Roman emperor, Constantine, after whom it was named, and for more than a thousand years it was the capital of the Eastern Roman Empire. It was then taken by the Turks (1453), and this change of masters has stamped upon it a wholly different aspect from that presented by any other city in Europe. For the Turks are a people of different race, different customs, and different religion from any of the other ruling nations in our continent. In religion they are Mohammedans, or followers of the Arabian prophet Mohammed; and one of the most striking peculiarities in the appearance of the city, even when seen from a distance, is that due to the style of building of the Mohammedan churches, or *mosques*, as they are called. One is struck by the number of domes by which they are crowned, and still more by the tall slender towers or minarets, from the top of which the *muezzin* calls the people to prayers.

But to see how strange a Turkish city is, one must enter the Turkish quarter, the city of Stamboul proper. This lies on a narrow promontory washed not only by the Sea of Marmora and the Bosphorus, but also, on the north side, by a channel running up from the Bosphorus, called the Golden Horn, which serves as the harbour of Constantinople, and, as such, is unsurpassed in Europe. Entering Stamboul, then, we find ourselves in a maze of narrow dirty streets. The houses are mostly of wood and earth. They are high, with overhanging roofs surmounted by cupolas. Towards the street there are no proper windows, merely openings carefully closed with

lattice, the true windows all looking out on an inner court. Wares are exposed for sale in great bazaars like markets, some open and some covered. Almost the only handsome buildings are the mosques, the grandest of which is the mosque of St. Sophia (originally a



MOSQUE OF SULTAN AHMED.

Christian church), standing in a square paved with marble and adorned with plane trees.

On the opposite side of the Golden Horn, which is crossed by a bridge of boats 1,300 feet in length, are the suburbs of Galata and Pera, which are occupied by foreigners, and have more the appearance of other European towns.

LESSON XXII.

RUSSIA. (I.)

THIS great country occupies all the east of Europe between the Arctic Ocean and the Black Sea, and extends from within the Arctic Circle to the

Extent.

latitude of Southern France, or, if we include the government of the Caucasus, to that of Southern Spain. The whole area of European Russia, including the last-mentioned government, is equal to about twenty-five times that of Great Britain; and to this must be added the area of the Siberian provinces and the provinces of Central Asia, which are more than double the extent of European Russia. These latter provinces will be described in the reading-book on Asia.

The whole of this area is not under one kind of government. The greater part of it is subject to an absolute monarch, who is called the Emperor or Czar, but the territory of Finland in the north-west, which was partly Swedish till 1809, has a separate government of a different nature. This portion of the country is called a grand principality; the Czar of Russia is the Grand Prince, but the principality has a Parliament elected by the people.

You have already learned that almost the whole of the vast territory of Russia is one unbroken plain. The Valdai

Physical features.

Hills, lying to the south-east of St. Petersburg, are scarcely hills at all, but a comparatively small plateau, the highest part of which is little more than a thousand feet above sea-level. The general level

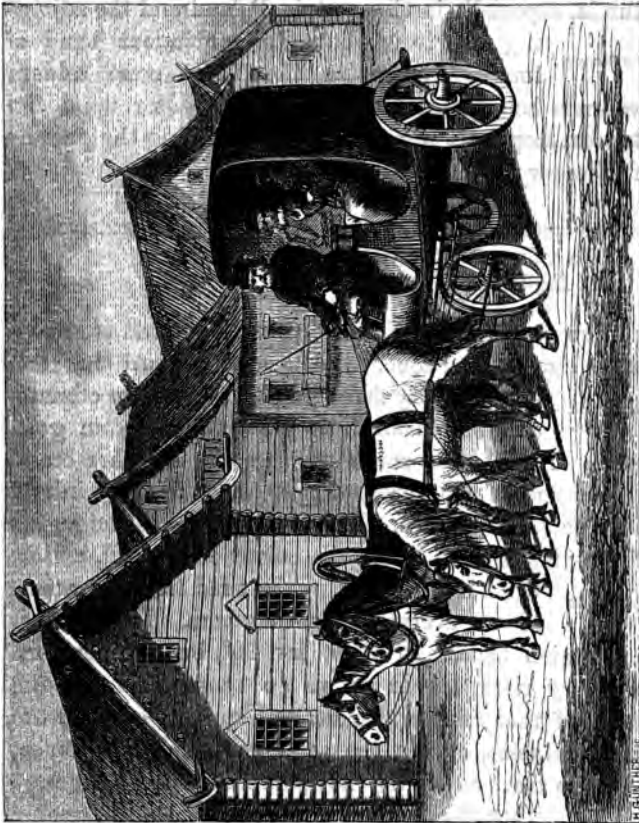
of Finland is somewhat higher than that of the adjoining tracts, and this region may be described as a table-land, though a very low one. The only mountains of Russia are those upon the frontiers, the Ural Mountains, the Caucasus, and the mountains in the south-east of the Crimea, which are a continuation of the Caucasus range.

Having the physical structure just described, Russia necessarily presents enormous surfaces of very uniform aspect. Yet it need scarcely be said that the aspect varies considerably in different parts. The climate changes greatly from north to south and from east to west, and with it changes the character of the vegetation. In the extreme north we have the very scanty vegetation of the Arctic regions. This portion of the

The
toundras. surface is called the *toundras*, which extend southwards almost to the sixty-fourth parallel of latitude, but farther south on the west than on the east side of the White Sea. Throughout this region we see during the long winter nothing but a snow-covered plain frozen to a great depth below the surface of the ground, while in summer the hard plain is converted into a morass, the surface being melted a few inches down. The principal plant that grows in this region is the reindeer-moss, which forms the chief, and indeed almost the sole food of the reindeer.

Next after the toundras comes the zone of the forests, which extends to about the sixtieth parallel of latitude, and thus includes the whole of The forest
zone. Finland not occupied by toundras. Throughout this zone forests cover immense areas, and form, indeed, the prevailing feature. In the government of Vologda, which is the second largest in all Russia, and

not much short of twice as large as Great Britain, more than nine square miles in every ten are covered with



RUSSIAN HOUSES AND A TARANTASS, OR COVERED TRAVELLING CARRIAGE WITHOUT SPRINGS,
LARGELY USED IN RUSSIA.

forests. In the north the forests are composed chiefly of cone-bearing trees, such as firs and pines; farther

south chiefly of oaks, which makes Russia one of the principal sources of supply for oak timber.

Even below latitude 60° there are large forests in Russia, especially in the west, in Poland and the adjoining provinces, but the continuous band of
The Steppes. forests known as the forest zone seldom descends below that limit. We then enter upon the Russian steppes, a region closely resembling the pusstas of Hungary.

All around

The boundless, waving grass plains stretch, thick starred
 With saffron and the yellow hollyhock,
 And flag-leaved iris-flowers.

The greater part of the steppes form what is known as the agricultural zone. In the northern part this zone
The agricultural zone. is not greatly favoured either by soil or climate, and much labour is required to obtain good crops. But farther south we come to a richer tract, blessed with a soil hardly surpassed for fertility in any other part of the world. This is what is called the region of the 'black earth,' from the colour of the soil, which,
The 'black earth.' when blown about by the wind in dry weather, covers everything with grime. In the west this region begins at about lat. 50°, but its northern boundary rises higher as we go eastwards. To the south of that limit the black soil spreads over all the rest of Russia, except the south-east and the Crimea, with the tract adjoining that peninsula on the north.

Altogether the black soil of Russia probably covers an area equal to not less than three times that of Great Britain, and wherever it spreads rich crops of wheat can be grown with extraordinary facility, provided only

the rainfall is sufficient. Hence, even in the time of the ancient Greeks and Romans, this part of Europe was celebrated for its wheat, as it is an important source of supply for the same product at the present day.

Unfortunately, however, this part of Russia is still poorly supplied with the means of conveying its products away. You have already been told in the sixth



SLEIGHING IN RUSSIA.

lesson how the navigation of the rivers is impeded. Railways are still few, and good roads (as in Hungary) almost entirely wanting. Throughout Russia, indeed, the roads are for the most part good only in winter, when they can be traversed on sledges.

The farther we advance to the south-east in Russia the more desolate does the aspect of the surface become. First the rainfall fails, so that crops cannot be depended on. Then the *black soil* itself disappears, and after

that the labour of the husbandman is more precarious still. A different aspect is presented, however, by the strip on the south-east coast of the Crimea. Sheltered by the mountains from the cold north winds, a vegetation flourishes here such as is not met with elsewhere in Russia. Trees and shrubs, flowers and fruits, all remind us of the shores of the Mediterranean, the climate of which here reappears.

West of the Caspian Sea there are only scanty pastures, grazed by the flocks of wandering, or, as they are called, nomadic tribes; and on the north-west of the same vast sheet of water the only product of the arid steppes is salt.

The salt
steppes.

LESSON XXIII.

RUSSIA. (II.)

WHEAT and timber are not the only products which Russia sends out to other countries. Besides timber, the forests produce other articles of value in commerce—namely, tar and resin, and the bast or soft inner bark of the lime-tree. Then, besides wheat, the Russians grow large quantities of rye, oats, barley, and buckwheat, the last a kind of grain which is not grown in our country; and, though wheat is the principal grain that Russia sends to us, some other countries receive from it a portion of its other grains. Altogether Russia exports about one-third of all the grain it produces.

Various pro-
ducts.

Hemp and flax, besides tallow, hides, and other products derived from cattle, are also among the chief Russian exports.

Another important product is the fish called the sturgeon, which is very abundant in the tributaries of the Volga, and is of value not simply as an ordinary article of food. Its roe is made into what is called *caviare*, which many people are fond of as a seasoning to their food. The swimming-bladder of this fish furnishes us with the best *isinglass*, and almost every part of the fish is utilised.

The mineral kingdom also supplies Russia with some important products, and especially metals. These

are found chiefly on the east side of the Ural Mountains, on the side accordingly which belongs geographically to Asia, but in the district which is reckoned politically a part of European Russia. The centre of the mining district is the town of Ekaterinburg. The chief metals obtained in that district are iron, copper, and gold, the last of which is found here in greater abundance than anywhere else in Europe. With the gold there is occasionally found a peculiar metal called *platinum*. Coal occurs in various parts of Russia, but is not yet worked to a sufficient extent to supply the country with all the coal she needs. In many parts of the country good fuel is very scarce.

In conveying all these products from one part of the country to another, and even to the places of export, the great rivers of Russia are of immense service. There are 13,000 miles of inland navigation afforded by these rivers, and the advantage of this facility for traffic is increased by the existence

of canals connecting different river basins. By this means the system of the Volga is connected with all the seas that wash the coasts of Russia. To the seaports at the mouths of the great rivers, Astrakhan at the mouth of the Volga, Taganrog at the mouth of the Don, Kherson at the mouth of the Dnieper, St. Petersburg on the Neva, Riga at the mouth of the Western Dvina, and Archangel at the mouth of the Northern Dvina, great quantities of produce are still brought down by means of the rivers themselves for export.

But now railways have been introduced as a means of transporting goods, and it is chiefly the railway that has raised Odessa to be the principal seaport on the Black Sea. It is principally by means of the railway, too, that the traffic of the Volga is conveyed from that river to the Don in order to be exported at Taganrog on the Sea of Azof. If you look at the map you will see that at certain parts of their course these two rivers have great bends in opposite directions, so that at one place they are brought very near each other. At this place there is now a railway between the two, and by that railway goods are carried from the one to the other.

The present capital of Russia is one of the seaports already mentioned, St. Petersburg, which is named after its founder Peter the Great, who ruled over Russia in the beginning of the last century. It stands on a moist and unhealthy site on the banks of the broad river Neva, along which there is a line of splendid embankments far surpassing in magnitude those of the Thames at London. Compared with other cities in Europe, St. Petersburg is remarkable for the

St. Petersburg.

immense size of its squares and the great width of its streets. It has a larger population than Liverpool.

The old capital of Russia is Moscow, on the river Moskwa, a tributary of the Oka, which again flows into the Volga. It is not much less populous

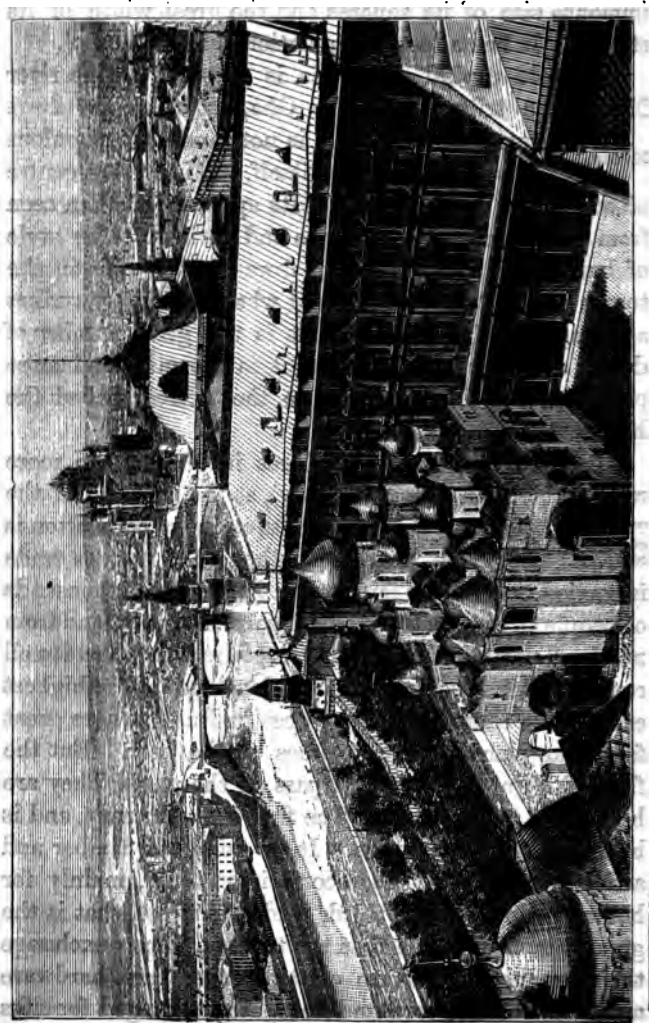
Moscow.

than St. Petersburg itself, and is a great centre of commerce and industry. Its appearance when seen from a distance is picturesque and curious. The style of building is quite different from what we see in the towns of Western Europe, and what principally strikes a stranger on first beholding it is the great number of domes and pinnacles by which it is crowned, and more particularly those belonging to the fortress called the Kreml or Kremlin.

As a place of trade few places in Europe are more remarkable than Nijni Novgorod, at the junction of the

The fairs
of Nijni
Novgorod.

Oka with the Volga. Its ordinary population is not large, about fifty thousand, but its trade is carried on at great fairs, when hundreds of thousands of people stream hither from all parts of Russia and from nearly all parts of Asia. Such great fairs are still held in all countries where commerce is not developed to the highest extent, and there are other places in Russia where great fairs take place at certain times of the year. But the fairs of Nijni Novgorod surpass all the rest. They are held three times a year. The first is in January, and is held on the frozen rivers. It is chiefly for timber and articles in wood. The second is in July, mainly for horses. But it is the third, held in August, that is the great fair. It is then that the two continents exchange their products. Russian cattle, leather, furs, hardware and earthenware, corn and flour, are exchanged for silks



MOSCOW.

and carpets and other costly woven fabrics, tea and southern fruits, diamonds and gems, and all the other products that are brought from India and China, Persia and Bokhara, Caucasia and Armenia. The traffic is carried on both by land and water. Thousands of booths cover the peninsula between the two rivers, and vessels of all sizes moored along the river-banks for miles and miles together are converted for the time into shops and magazines.

LESSON XXIV.

NORTH AMERICA, I.

FORM, SITUATION, AND PHYSICAL FEATURES.

If we compare North America with Europe we discover various interesting points of resemblance and of difference between the two. In shape they are somewhat alike, each having roughly the form of a broad wedge. But while in the case of Europe the wedge tapers more or less from east to west, in North America it tapers from north to south; and while in Europe the broad part of the wedge is that by which it is attached to the adjoining continent of Asia, in North America it is only the tapering point, the Isthmus of Panama, that is connected with the southern half of the great western continent. Europe, again, lies between the Arctic Ocean on the north and a series of inland seas on the south, while North America, having the Arctic Ocean at its base, has the two great oceans of the world, the Atlantic and Pacific, on its two sides.

North Ame-
rica and
Europe
compared.

Both Europe and North America are, moreover, alike in being broken up into peninsulas and islands by a number of gulfs, bays, and arms of the sea. But in Europe this is much more the case than in North America, and in the latter continent the most irregular part of the coast is in the north, where the land is scarcely habitable and the sea scarcely navigable, so that this feature is not of the same advantage to North America as it is to Europe.

When we consider the situation and dimensions of the two continents now compared, we find other points of resemblance and of contrast. First let us look at the latitude and longitude. The most northerly point of the mainland of North America is Point Barrow, in about $71\frac{1}{2}^{\circ}$ N.—that is, nearly in the same position as the most northerly point of Europe—but the most southerly point lies about 7° N., in the Isthmus of Panama, sixteen degrees within the torrid zone, while Europe does not advance at any point to within twelve degrees' distance from that zone.

In longitude the North American continent extends from about $55\frac{1}{2}^{\circ}$ to 168° W., and thus stretches across about 112 degrees, while the continent of Europe occupies only about 80 degrees. In the case of North America both the extreme east and west points are in the north, whereas one of them in the case of Europe is near the south and the other near the north. The line joining the extreme points of longitude in North America is thus one that does not deviate very much from an east and west direction, while in Europe it is a line running from south-west to north-east.

As regards the area, the mainland of North America

is equal to nearly ninety times the area of Great Britain, or more than twice as much as the whole area of the European mainland; but while in Europe the greater part of the area is to the north of lat. 50° , in North America the greater part is south of that line.

When we compare the surface features of Europe and North America, we again find that there are noteworthy points of agreement and difference. In Europe, you will remember, there are mountains in the north and mountains in the south, and a great plain spreading out eastwards to the broad end of the wedge. Just so, allowing for the difference of position of the North American wedge, we have mountains in the west and mountains in the east, and a great plain between the two, spreading out towards the north. And while in Europe the direction of the principal mountains is more or less east and west, in North America it is more or less north and south.

But here we must note some further differences. In America the mountains are much more continuous than in Europe. The principal mountain system in America is that known as the Rocky Mountains, which extend all the way from north to south near the west coast. They do not form a single unbroken range, for in almost all parts at least two ranges run parallel or nearly parallel to one other. But the system or assemblage of mountains is quite continuous. Where one mountain range ends another begins.

Between the parallel ranges the land is always elevated—that is, it forms a plateau or table-land. In the broadest part of this table-land—namely, in the west of the United States—the high-

The Rocky
Mountains.

The great
western
table-land.

land region spreads out to at least five hundred miles in breadth, and is traversed by numerous mountain ranges all running in the same direction. It is in this part of the system that the loftiest ranges occur, though not the highest peaks, a few higher ones standing apart elsewhere. Here, however, many peaks rise to upwards of fourteen thousand feet in height, but the mountain chains to which they belong rise from a level of between four and five thousand feet at their base.

Farther south, in Mexico, the Rocky Mountains again spread out into a broad plateau, which rises to between seven and eight thousand feet in height, and here, where the continent is so much narrower, the mountains stretch across almost its whole breadth. Both in Mexico and in Central America the mountain peaks include numerous active volcanoes, some of them rising to a great elevation.

In the middle of the continent the descent to the plain is very gradual. The eastern base of the mountains is about five thousand feet above sea-level —that is, at a higher elevation than the summit of the highest mountain in the British Isles—yet the slope of the prairies stretching down to the Mississippi is so gentle that one seems to see nothing but a level plain.

On the other side of the Mississippi rises the other great mountain system of North America. This is called the Appalachian or Alleghany Mountains. In these also we have parallel chains, less lofty but even more continuous than those of the Rocky Mountains. They stretch from south-west to north-east parallel to the Atlantic sea-board of the

The Mexican
table-land.

The central
plain.

The Appa-
lachian or
Alleghany
Mountains.

United States, beginning about two hundred miles north of the Gulf of Mexico and terminating within a short distance of the estuary of the St. Lawrence.

LESSON XXV.

NORTH AMERICA, II.

RIVERS AND LAKES.

WHEN we compare the inland waters, the rivers and lakes, of North America with those of Europe, we are more struck by the differences than by the resemblances, and here all the advantages are on the side of North America. The rivers of this latter continent greatly excel those of Europe in size and importance, and its fresh-water lakes are the largest in the world.

The size of its rivers is a natural consequence of its physical structure. When you think of an enormous plain bordered by mountains on the east and west, but open to two seas on the north and south, it is only what you expect when you find gigantic rivers flowing down from the mountains on both sides, and finding their way directly or indirectly to the northern and southern seas. Leaving out of account the narrower and more entirely mountainous part of the continent beginning with Mexico, we find in the north the Mackenzie and Saskatchewan, with its continuation the Nelson, flowing to the northern seas; in the south the Mississippi and the Rio Grande del Norte entering the Gulf of Mexico; while the St. Lawrence flows round

North
American
rivers.

the northern extremity of the eastern mountains to the Atlantic Ocean, as the Yukon flows round the northern end of the western mountain system to the Pacific.

These are not all the important rivers of North America, but they are the most important, and they are all at least rivals of the mightiest rivers of Europe. By the services which they render as means of inland navigation they make up to a very large extent for the deficiencies of North America in respect of its extent of coast-line.

Of all the rivers mentioned, by far the most important in every way is the Mississippi. With the exception of the Rio Grande del Norte, it collects the waters of all the great streams belonging to the southern part of the North American plain. Some of these tributaries, such as the Arkansas and Red River on the right, and the Ohio and Tennessee on the left, are larger than almost all European rivers, and one of them, the Missouri, which it receives on the right, is much larger than the upper part of the Mississippi itself, and ought to be considered as the main stream. It flows from the eastern slopes of the Rocky Mountains near the northern boundary of the United States, and when the length of this tributary is added to that of the Lower Mississippi, the total length amounts to about 4,200 miles, which is greater than the length of the Danube and Volga combined. The area which it drains is nearly two and a half millions of square miles in extent—about as large, that is to say, as Russia, with Germany, France, and the British Isles added.

But even this is still insufficient to give one an adequate idea of the part which this river system plays in

North America. It does not empty itself, like the Volga, into an inland sea, nor is it obstructed near its mouth by dangerous rapids and shallows like the Danube, but it flows steadily on, a deep broad stream, capable for the greater part of its course of carrying on its surface vessels of large size. Moreover, it flows through the most populous part of the continent, from the region where wheat and maize are grown to that which produces cotton, rice, and tobacco. One fact will in itself serve better than any other to enable us to realise how valuable a means of communication is afforded by this great stream; the fact, namely, that from the towns of St. Paul and Minneapolis, situated in the northern State in which the Mississippi proper takes its rise, it has been found possible to convey grain and flour entirely by water to Liverpool and Glasgow.

So much for the Mississippi itself, but to this must be added the fact that each of the great tributaries above mentioned is navigable without interruption for hundreds of miles above its mouth, the Missouri indeed for more than two thousand.

Hardly less important are the great lakes of North America. Their importance is enhanced by the fact that the chief of them, Lakes Superior, Michigan, Huron, Erie, and Ontario, lie in a chain near the heart of the continent, and that this chain of lakes is drained by a great navigable river, the St. Lawrence. But it is unnecessary to dwell in this place on the subject of these lakes, as it has already been treated in a previous Reader in this series.

We may here note, however, one point of corre-

Importance
of the Mis-
sissippi as a
navigable
stream.

The great
lakes.

spondence between the lakes of Europe and those of North America. If you will compare sufficiently large maps of this far north part of North America, and of the north-west of Russia and northern Scandinavia, you will see that those parts of the two continents lying in corresponding latitudes agree very much in the distribution of their lakes. Both areas are studded with lakes very varied in size, very irregular in outline, and promiscuously scattered over the surface. The only important lakes in North America south of the British area and the chain of the great lakes, are the Great Salt Lake in Utah, and the Lake of Tezcuco in Mexico.

LESSON XXVI.

NORTH AMERICA, III.

CLIMATE.

WHEN we consider the climate of North America, it is again interesting to compare this division of the globe with Europe; but we then discover chiefly differences, not points of resemblance, and this even when we compare regions in the same latitude. The reasons of this fact are to be found in the difference of situation and of physical features. The climate of North America is different from that of Europe because the continent lies between two oceans on the east and west, and because its mountains run north and south on each side of its great plain. It will be worth our while to see

*Contrasts
with Europe.*

how each of these circumstances has a marked effect on climate.

When we think of North America, it is mostly the eastern side that we have in our minds. That side is the one nearer to us, the more populous, and the more highly civilised. Now that side is the part in which the climate differs most greatly from that of Europe, and especially from that part of Europe in which we live. Newfoundland, the large island at the mouth of the St. Lawrence, lying in the same latitude as the south of England and the north of France, has a climate cold and uninviting, with frequent rain and snow in winter and fogs in summer.

Further inland, in the Dominion of Canada, in the same or even lower latitudes, there are about five months in winter during which the ground is covered with snow; and even about New York, which is in the same latitude as the middle of Spain, the winters are long and severe, while the summers are hot.

The extremes of temperature in the temperate zone on the east side.

The explanation of this you will understand when you call to mind the reason given for the exceptional mildness of the coasts of Europe. It is these coasts that are exposed to the south-westerly winds which prevail in the northern part of the ocean, whether the Pacific or the Atlantic, and these parts accordingly which get the benefit of the warmth brought by them from sub-tropical seas.

What we ought to compare, therefore, with the climate of Western Europe is that of the west of North America, that of California, Oregon, and British Columbia; and there, indeed, we find the same mild and

equable climate extending nearly, though not quite, as high in latitude as it does in Europe.

The climate of the eastern side of the North American continent should rather be compared with that of the east of Europe, where, as you will remember, there are the same extremes in summer and winter. Still more appropriate may it be compared with the eastern coasts of Asia.

In neither case do these eastern coasts get the benefit of warm winds from southern seas, and in both continents, moreover, the climate is rendered still colder by a cold sea current which creeps down along the coast from the north. In North America this current advances to the neighbourhood of New York in about lat. 40°, as in Asia it advances to the peninsula of Corea in the same latitude.

Such, then, is the effect of situation on the climate of North America. Let us consider now the manner

The effect of the mountain ranges on the climate.

in which the climate is modified by the position of the great mountain ranges. One very important effect is due to the fact that the Rocky Mountains run directly at right angles to the prevailing south-westerly winds of the temperate zone. You will remember how in Europe these winds bring us most of our rain supply, and how the amount of rainfall diminishes as a rule the farther we go from their influence. Just so is it in the temperate parts of Western North America. But there the lofty Rocky Mountains intercept the moisture in a great measure, and deprive vast tracts in the east of their due share. Hence it happens that in the United States, while the narrow strip west of these mountains is blessed with

abundant rains and exuberant fertility, there is a region to the east, hundreds of thousands of square miles in extent, so dry as to be described as the Great American Desert. An absolute desert it is not. Large parts of it produce at least shrubs and grasses that are capable of being used as fodder for cattle, and other parts can be made to grow corn by irrigation ; but there are still extensive areas which are quite sterile.

A fortunate thing it is for the eastern part of the United States that the Gulf of Mexico advances so far into the continent. From that source of supply the lower valley of the Mississippi derives the abundant rains which enable it to bring forth the rich crops that cover its fields in close succession.

The drought east of the Rocky Mountains is one effect of the disposition of the leading physical features of North America, but it is only one. There is another effect, of less consequence indeed, but still very marked, and one in which the difference between Europe and North America comes out in a very striking manner. It is an effect due to the fact that the mountains leave the intervening plain open from north to south.

You have not forgotten, it is to be hoped, how much the Mediterranean countries owe to the fact that they are protected from cold northerly winds by a sheltering barrier of mountains running east and west. Now the fact just stated as to the great North American plain means that there that sheltering barrier is absent, and that accordingly the southern parts of the plain, like the south of Russia, is liable to have its temperature lowered by cold air rushing in from the north. These

cold winds sometimes blow for days together. In Texas and the adjoining States they are known as 'northers;' in Mexico, where they even reach the tropics, they are known as 'nortes;' and in both regions they are dreaded as well on account of their violence as their piercing cold. In consequence of this openness towards the north the temperature has been known to sink, in the same latitude as Malta, to 16° below zero (Fahrenheit)—forty-eight degrees of frost, a temperature seldom known in any part of the British Isles. Ice forms at the mouth of the Mississippi in lat. 30° N., nearly six degrees farther south than any point in Europe; and even in the extreme south of Texas, lat. 26° N., about the same as that of Patna in Bengal, as much as nine degrees of frost has sometimes been experienced.

In Mexico we enter on a tropical climate, some account of which will be given in the lesson on that country and on Central America.

LESSON XXVII.

NORTH AMERICA, IV.

PRODUCTIONS.

UNDER this head also it is extremely interesting and instructive to compare North America with Europe.

Europe and
North Ame-
rica com-
pared.

By so doing we shall meet with some striking illustrations of the differences between the two continents. One necessary consequence of the difference in situation of North America as com-

pared with Europe is that in the former we have the products of a tropical, as well as of a temperate and arctic climate. But the most interesting comparison to make is that between the products of the temperate zone in both. It is that zone by which in both by far the most important products are furnished.

In the lesson on the productions of Europe you will remember that an important distinction was pointed out between articles of food and raw materials on the one hand, and manufactured articles on the other hand. It was at the same time mentioned that the chief feature in the production of Europe is the fact that the continent as a whole produces an excess of manufactured articles. Now in America it is precisely the reverse. There the production of raw material and articles of food (what the Americans call shortly and comprehensively 'food-stuffs') exceeds that of manufactured articles, and that in a very remarkable degree.

The best illustration of this fact is to be found in the list of exports of the United States, which furnish by far the greatest proportion of the total products of North America. Among these exports there are two which exceed the others beyond all comparison. These two are grain, or flour, the principal support of human life, and raw cotton, the chief material employed in making clothing for the inhabitants of all the warmer parts of the earth. The former is the principal product of the northern and western States, the latter of the south-eastern.

The kinds of grain produced in America are the same as in Europe, but there is a difference in the pro-

portion, and this difference illustrates the contrast in climate. In our continent the chief grain is wheat, in America it is maize or Indian corn. In the United States the total produce of the latter is more than three times that of the former. Now maize is the product of districts with very warm and dry summers, such as prevail in the principal grain-growing districts of North America, while wheat is the product of a more moist and temperate climate such as prevails in Europe.

And here it is worth while to note one interesting fact connected with the grains grown for food. Maize is the only one of importance which was grown in America before the arrival of European settlers, and the only one which was introduced from America into the Old World, although it is now largely cultivated in all continents of the globe. All the other grains, wheat, oats, barley, spelt, rice, &c., belonged originally to the Old World, and were introduced thence into the New.

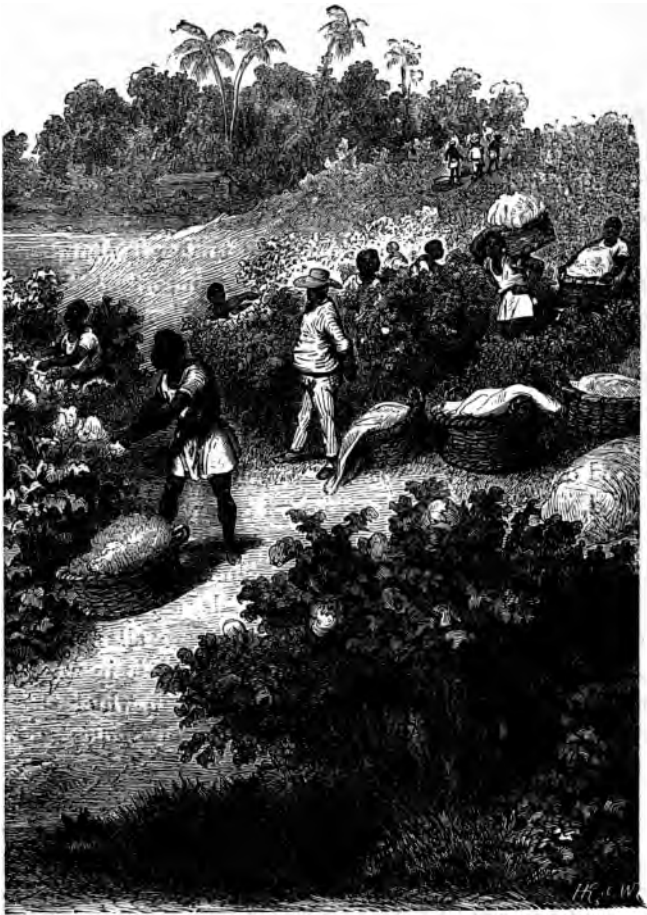
The immense production of cotton in the temperate zone in North America is another illustration of the difference between that continent and Europe.

Cotton.

It is due not only to the fact that the land here advances to the southern limit of the temperate zone and even beyond it, but also to this circumstance, that these southern regions in North America comprise so extensive an area of lowlands suitable for agriculture, while in Europe the southern lands are occupied chiefly by mountains.

But besides grain and cotton America produces in abundance many other food-stuffs and raw materials.

Sheep and cattle, and all kinds of animal products, such as hides and skins, wool, horn, leather, tallow,



GATHERING COTTON ON A COTTON PLANTATION.

cheese, and butter, all occupy an important place under this head. Hemp and flax are among the other materials grown for manufacture, and silk-worms are extensively reared. But more important than these is tobacco, which is one of the staple products of the United States, and wine is more plentifully produced every year.

In the tropical parts of the continent, coffee, cocoa, vanilla, indigo, cochineal, india-rubber, and various drugs are added to the products of the north.

In many parts of the continent timber is abundant, and you have already learned how important the so-called 'lumber' trade is in Canada, as it is likewise in the northern parts of the United States. The trade called by that name furnishes chiefly the ordinary timber used in carpentry; but the tropical forests of Mexico and Central America yield much wood of a more valuable kind, such as mahogany, rose-wood, Brazil-wood, and a kind of cedar, besides logwood and other dye-woods.

The products independent of climate are also of the greatest value. The precious metals, as well as coal and iron, copper, lead, and petroleum, are all found in great abundance in the United States; while in Mexico silver ores are abundant. The localities in which these minerals are found will be more precisely indicated in subsequent lessons.

Manufactured products, too, are not unimportant, though so far outstripped by those of food-stuffs and raw materials. And here it may be observed that while the most advanced manufacturing districts of Europe are in the west, in North America

they are in the east—namely, in the part most accessible from Europe, the part which was first settled and is still by far the most populous; the part, too, where the supplies of coal and iron are chiefly located.

LESSON XXVIII.

PEOPLE OF NORTH AND SOUTH AMERICA.

WHEN we compare the present population of America as a whole with that of Europe, by far the most noteworthy fact is the comparatively small density of the population in the former continent. In Europe the density approaches ninety per square mile, in America it is only about seven. In other words, taking the difference of area into account, we find that there are twelve or thirteen inhabitants in Europe for every one in America.

The cause of this difference is fully explained by the history of the continent. At the time of the discovery of America by Europeans, that continent was almost wholly inhabited by hunting tribes. There were only two great states in which the people were settled and supported themselves by agriculture—namely, Mexico in North, and Peru in South America. Both of these were overthrown by the Spaniards, and the present settled communities have grown up under the care of Europeans within the last three or four hundred years.

Now *tribes that live by hunting always require a*

much greater extent of ground in which to obtain their food and other necessities of life, than those who live in any other way; so that the population of the American continent could not but be very scanty until the place of these hunters was taken by people living as the natives of Europe live.

Hence it happens that the most populous parts of America are those which have a climate somewhat similar to that of Europe, and which are thus best adapted for the reception of European settlers. These parts are chiefly in North America—in the United States and portions of British North America. In these two dominions are found the bulk of the population of the whole continent, and some districts in them are as densely populated as most of the countries in Europe. But almost everywhere within these two great territories the original natives of North America form but a small proportion of the people. Most of the inhabitants are of Teutonic origin, descended, that is to say, from Anglo-Saxons (or natives of Britain), Germans, or Scandinavians; and while this Teutonic element is increasing with astonishing rapidity, the native Indian element appears to be rapidly dying out.

South of the United States the state of matters is different. Here also, indeed, Europeans are for the most part dominant, but they are mostly either Spanish or Portuguese (the latter in Brazil). And in this part of the continent the Europeans, though dominant, do not form the bulk of the population. They are generally the wealthiest and the *highest in rank and influence*, but the main body of the

The most
populous
parts of
America.

Spanish and
Portuguese
America.

population is composed either of native American Indians, or of half-castes—that is, people partly of European and partly of native origin.

Besides Europeans or people of European origin, there are in America, both North and South, considerable numbers of people originally belonging

Negroes. to other continents. First, there are negroes of African descent, all formerly and still to some extent slaves. These are chiefly found in the southern part of the United States, in Mexico, the West Indies, and Brazil. They make up altogether more than one-tenth of the entire population. Secondly, there are Asiatics,

Asiatics
(Chinese and Hindus). chiefly Chinese and Hindus. These form as yet but a trifling proportion of the population, but they are not without importance. The Chinese are found both in North and South America and in the West Indies. In North America they are almost confined to the Pacific coast, where they have immigrated entirely of their own accord, and are looked on with great disfavour by the white labouring population. In South America and the West Indies, they have, like the Hindus, been introduced by the European planters, and come pledged to work for a certain term of years on the tobacco, sugar, and other plantations. Such labourers are called *coolies*.

The number of the native American Indians can only be roughly estimated, but they are reckoned to

Original natives make up perhaps a fourth of the whole population.

A large number of the Indians both of North and South America are still uncivilised, and roam over the plains or through the forests as hunters.

In the United States a small proportion of them are mingled with the rest of the nation and pay the same taxes as the whites. The majority, however, Civilised and uncivilised Indians. do not pay taxes, and these live in certain territories reserved for them, the largest of which is the so-called Indian Territory, or Indian Country, north of Texas.

LESSON XXIX.

UNITED STATES (I.)—GENERAL ACCOUNT.

THESE States comprise a vast territory, stretching from ocean to ocean between the British dominions in the north and the States of Mexico in the south, Boundaries. besides the isolated territory of Alaska in the north-west of the continent. If you look at the map you will see that the boundary which separates the main part of the United States from the British possessions is in its western part a straight line. That line is the forty-ninth parallel of north latitude, which was fixed as the frontier between the two dominions in 1846. In the south similar straight lines mark the frontier with Mexico in the western part, while in the eastern part the boundary-line follows partly the Rio Grande (that is, 'Great River').

The total area of this vast dominion is more than three and a half millions of square miles—that is to say, Area and Population. it is not far short of the whole area of Europe, and fully forty times that of Great Britain. *The population, however, amounted at the last census,*

which took place in 1880, to little more than fifty millions, which is not one-sixth of the population of Europe; but it must be remembered that this population is increasing with extraordinary rapidity. At the census of 1880 the number of people in these States was one-third more than it had been ten years before, when the previous census was taken.

The government of the United States is more like that of Switzerland than that of any other European country. It is republican, the people electing not only their own Parliament (here called a Congress), but also the supreme ruler, who bears the title of President, and is elected every four years. But this dominion is like Switzerland also in being made up of a number of smaller republics, which all manage their own local affairs. These are called States, and it is for that reason that the whole dominion has the name of the United States. But one thing must never be forgotten in comparing the United States and Switzerland, that while in the latter everything is on a small scale, in the former everything is on a large scale. There is one of the United States, namely Texas, which is three times the size of Great Britain, while the smaller republics in Switzerland are like English counties as regards size, and indeed in most cases very small counties. And there is another difference between the two countries. Several of the divisions of the United States are not independent republics even in what concerns their local affairs. These are called Territories, and in them the chief rulers and judges are appointed by the President of the great republic, the head of the whole dominion.

A region so vast as that embraced by the United States cannot well be described as a whole, and it will therefore be convenient to divide it into a number of sections, and give an account of each of these separately. And when we consider the physical features, climate, productions, and population, we find that, leaving Alaska out of account, the most suitable division to make is one into four sections.

Natural sub-
divisions.

First, there is a section in the north-east where the rainfall is sufficient to allow of agriculture being carried on without irrigation, and where the chief products are similar to those of Europe, and the population is almost entirely of European origin.

Secondly, there is a section in the south-east where the rains are even more plentiful than in the north-eastern section, but where the products are those of a sub-tropical climate—cotton, tobacco, rice, and southern fruits—and where a large proportion of the labouring classes are negroes who were once slaves.

To the west of these two sections is the vast area already spoken of in the lesson on climate, where the rainfall is very deficient. The boundary between this area and the eastern sections cannot be precisely fixed, for the transition from the one to the other is gradual, but, roughly speaking, we may take as the eastern boundary the meridian of 100° W. Look at the map, and you will see that this meridian passes through the middle of the United States near the broadest part. In the same rough way we may take the meridian of 120° as the western boundary, and you will see that it thus reaches the Pacific coast in the south-west. The region *so bounded* is chiefly occupied by the plateau of the

Rocky Mountains, and throughout its whole extent the rainfall is so slight and the evaporation so great that agriculture cannot be pursued in it without resorting to irrigation. It will hence be most conveniently treated as a separate section under the name of the Arid Region. It is the most thinly populated part of the United States, few of its divisions having more than one inhabitant to the square mile.

Finally, there is a narrow strip on the Pacific Ocean, lying to the west of the mountains bordering the great plateau, where the rainfall is everywhere sufficient for agriculture, and in the more northerly portion very abundant indeed. Here we are again in a fertile and prosperous region, with magnificent mountains and forests, and valleys yielding copious supplies of corn and wine, and inhabited by a population in many respects different from that of the east. This section will be described under the name of the Moist Region of the Pacific.

The same lesson will also contain a few words on Alaska, the distant Arctic possession of the United States.

LESSON XXX.

UNITED STATES (II.)—THE NORTH-EAST.

In order to find the boundary which it is best to assume for this section, look in the map for the river Ohio, the principal tributary of the Mississippi on its left bank. On the east side of the Mississippi all the states to the north of that tributary, and farther east

Boundaries.

all the states to the north of the line between the Ohio and the head of Delaware Bay, belong to this section. On the west of the Mississippi we may assign to it all the region north of the middle line of the United States running east and west, and east of the line already indicated, namely, the 100th meridian to the west of Greenwich, which is about the middle line running north and south.

This section is on the whole by far the most populous part of the United States, and may be described in general terms as the most European part of that dominion. As already stated, the population is almost entirely of European origin; the products are those of Europe—wheat, maize, European domestic animals, and European fruits; and the manufacturing industries carried on in the older towns are the same, and pursued in the same manner as in the towns of Europe.

Physically, the region is for the most part a plain, but it is in this part that the Alleghany Mountains attain their greatest breadth. In Pennsylvania they form four parallel ranges with intervening valleys, stretching over a breadth of about a hundred miles, and here, it may be mentioned, the rocks contain an extraordinary wealth of coal, iron, and petroleum. On the east side of the Alleghany Mountains there is a strip of lowlands adjoining the Atlantic, narrower towards the north than towards the south, but almost all the area to the west belongs to the great plain.

If we are asked what after all is most remarkable in this section of the United States, we must answer its great cities. It is in them that we see most clearly wherein North America differs from

Physical
features.

The cities of
the north-
east.

Europe. We see it to some extent in their outward appearance, but it is all the more evident when we at the same time consider their history.

First in importance beyond all comparison is the city of New York. New York proper occupies the greater part of a small island called Manhattan New York. at the mouth of the Hudson River, where the estuary of that river forms a magnificent harbour opposite the western end of Long Island. The older part of the city is crowded into the southern end, and this part is not unlike most European cities of the same class, irregularly built, with winding and crooked streets. But the newer and larger part of the city is thoroughly American in character. Here the streets are long, wide, and straight; and one set of streets, running exactly parallel to one another in one direction, is crossed at right angles by another set, likewise long, wide, and straight. The population at the last census was more than twelve hundred thousand—in other words, it was more than twice that of Liverpool.

Such is New York proper. But on different parts of the land adjoining the same harbour stand other large towns, which combine to form a single seaport, just as Birkenhead forms one seaport with Liverpool. Thus on Long Island stands the town of Brooklyn, which is itself larger than Liverpool, and is now connected with New York proper by a gigantic bridge. On other points stand other towns, and all these may be said to form together New York in the larger sense. Now this larger New York has a total population of nearly two millions. That means that it ranks next after London and Paris in point of population among

the cities of the world, and as a seat of trade it is surpassed by London alone.

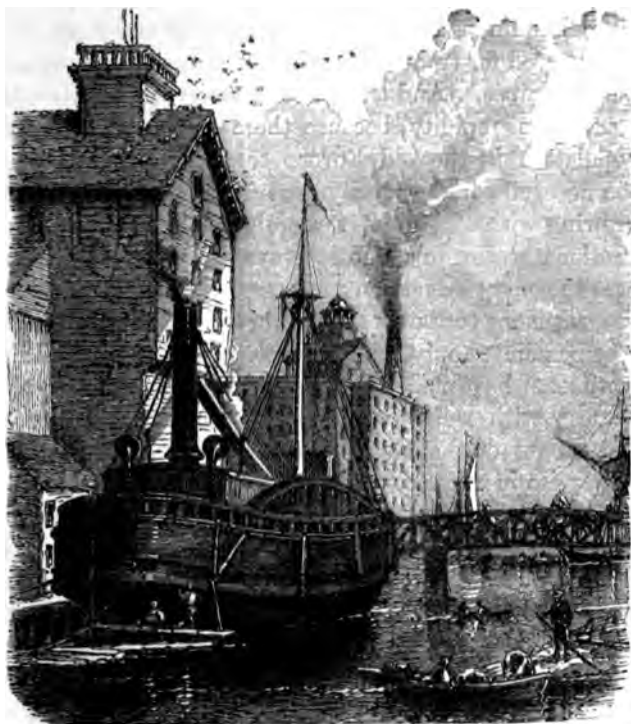
Now consider the history of this great city. It was founded in 1621 by the Dutch, and it was first called New Amsterdam. It has thus risen to the rank it now holds among the cities of the world in little more than two centuries and a half. It is already the rival of Paris and London, while still in its infancy as compared with the length of time which these cities have existed.

About ninety miles south-west of New York, at the head of Delaware Bay, stands Philadelphia, the second largest of American cities. It was founded about two hundred years ago (1682), and its population now approaches a million; but so wide are its streets and so extensive its open places that it covers an area about as large as that of London, which has a population five times as great.

But there are more wonderful cases still. At the southern end of Lake Michigan lies Chicago, which at the census of 1880 was already a splendidly-built city with rather more than half a million of inhabitants. Fifty years before, the site on which it now stands was occupied by about a dozen families. It has thus grown in half a century from next to nothing into a town more populous than most of the capitals of Europe. It has done so in consequence of its situation, which marked it out as a great seat of trade as soon as the neighbouring country had got inhabited by growers of corn, rearers of live stock, and fellers of timber. Chicago is now the leading market in the world for grain and fruits, animal pro-

duce, and timber, or, as it is called by the Americans, 'lumber.'

These towns, we have said, show us the difference



LOADING A GRAIN-VESSEL ON A NORTH AMERICAN RIVER.

between Europe and America. They serve as the best index of the rapid development of the American continent. They remind us that what we see in that continent is not the growth of a new people so much

as the expansion of Europe on a new soil. It was European people who built these cities, people who had all the experience of European civilisation, who knew the convenience of wide and straight streets, and commodious buildings, and who knew how to build all that was wanted for trade and industry as soon as trade and industry arose. And trade and industry sprang up with marvellous rapidity because there was such a large population in the old Europe eager to buy whatever the new soil could so easily produce; and they went on growing with still greater rapidity when European inventions, steamships and railways, made it easier than ever to convey American produce from remote parts of the continent to the European shores. And here, too, it may be pointed out that the great plain of the American continent has made it peculiarly easy to cover the country with railways, while the numerous breaks in the ranges of the Rocky Mountain system have been of service in allowing railways to be carried across the entire breadth of the land. Already several lines of railway span the continent from ocean to ocean in the United States alone, in addition to the one now in progress in the Canadian Dominion.

LESSON XXXI.

UNITED STATES (III.)—THE SOUTH-EAST.

THIS section comprises all the area east of the 100th meridian and south of the last section. In its physical features it resembles the last, but the Alleghany

Mountains are narrower here, and leave a broader margin of lowlands between them and the sea both on the east towards the Atlantic Ocean and on the south towards the Gulf of Mexico.

In its population and its products it is less like Europe than the region lying to the north. Here too, indeed, the population is chiefly of European origin, and even in those districts in which this part of the population is not the most numerous it is still that which has the most wealth and influence.

But besides the European element, there are other elements of considerable importance. First, there is what the Americans call the 'coloured' population, descended from the negroes once introduced as slaves from Africa to work on the plantations where white men could scarcely stand the hot climate. Almost the whole region of which we are now speaking was formerly slave-holding, and though the slaves were all freed during the great civil war more than twenty years ago, negroes were still more or less numerous at the last census in all the states that formerly held them. In some, and in particular those on each side of the Lower Mississippi, they even outnumber the white population.

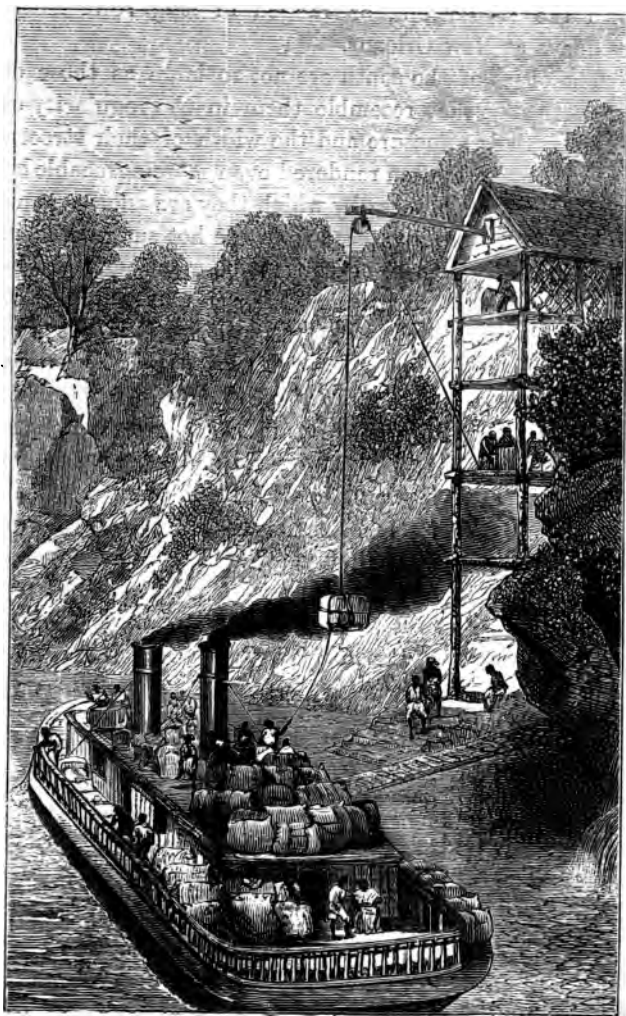
The other non-European element of the population is composed of the native Indians, but these are not diffused, like the negroes, all through the region, but are chiefly congregated on the territory allotted to them by the United States Government.

European products, such as wheat and maize, are largely grown in this region as in that farther north, but the farther south we go the more striking does the

difference from Europe in the nature of the produce become. Products of a warm climate, grown only in certain favourable situations in Europe, are here found to be staples, and others, which do not attain the position of staples, are at least much more general than they are in our continent.

The chief products here referred to are tobacco, cotton, rice, and the sugar-cane, but it is the first two that are most characteristic of the agriculture of the south. Tobacco is specially important in the northern part of the region, but cotton takes its place farther south, and it is to this last product that the Southern States owe the most beautiful and interesting features of their agriculture and their trade. 'The cotton-growing cotton plant,' writes one visitor to these regions, 'is beautiful from the moment when the minute leaflets appear above the moist earth until the time when it is gathered in. In June, when it is in bloom, and when the blossoms change their colour day by day, a cotton plantation looks like an immense flower-garden. In the morning the blooms of upland cotton are often of a pale straw colour, at noon of a pure white, in the afternoon perhaps faint pink, and the next morning perfect pink.'

Less beautiful perhaps, but not less interesting, is the scene presented when the gangs of swarthy cotton-pickers are busily engaged in plucking the white tufts of cotton fibre from the withered flowers, which are formed by nature so as to hold the cotton firmly till gathered. And not less striking to a stranger is the sight of a long cotton-train crossing the southern plains, or that of heavily-laden cotton-boats steaming



LOADING A COTTON-STEAMER.

down the Mississippi, or ranged in long rows along the quays at New Orleans.

The cities of the south are not so large as those of the north, but they resemble them in the regularity of their structure and the width of their streets, and are often rendered even more agreeable by the shady groves of trees by which they are adorned, and by which they are sheltered from the hot summer suns.

Towns. Among these cities must be mentioned Washington, not because it is one of the largest or busiest of American towns, but because it is the seat of government for the United States. It is here that Congress meets, as our Parliament meets in London, and here all the chief Government departments have their offices. In appearance it is the very model of American regularity and spaciousness. It stands in no state, but in a small district called the District of Columbia, which is directly under the general Government of the United States. This district is situated on the river Potomac, the estuary of which opens into Chesapeake Bay at about the middle of the east coast.

LESSON XXXII.

UNITED STATES (IV.)—THE ARID REGION.

THE extent of this region, the boundaries of which were roughly indicated in the general lesson on the United States, is enormous. It comprises about four-tenths of the entire area between British America and Mexico, and is thus equal to about ten

Extent.

times the area of the British Isles. Throughout that area the average rainfall for the whole year does not exceed twenty inches, and when you consider that in the driest part of England the amount of rain falling in the course of the year is seldom less than twenty-five inches, and that the region of which we are now reading lies entirely within latitudes where the power of the sun is much higher, and the amount of evaporation much greater, than in England, you will easily understand that that rainfall is quite insufficient to maintain agriculture.

It follows as a necessary consequence from the character of the land just described that it is the least

The rarity of
its popula-
tion.

populous part of the United States, leaving out of account the Arctic territory of Alaska. The population as ascertained at the last census then amounted to an average of only about two persons for every three square miles. This, however, does not include the uncivilised Indians, who are more numerous here than in any other part of the States; but, though their number cannot be accurately determined, it is certain that, even if they were included, they would not add much to the average.

It is because this region is so thinly peopled that so small a part of it is included among the States of the great republic; that is, as already explained, among the smaller republics which have the entire management of their own local affairs. There is only one State that is entirely included within it, the State of Colorado. With that exception all the divisions you see on the map completely embraced by the limits of this region are Territories, while on the borders of the region the divisions are in some cases States, in others not.

But arid and thinly peopled as this region is, it would be a mistake to suppose that it is almost entirely unproductive or incapable of maintaining a larger population. For, in the first place, even crops Possibility of irrigation. can be grown in the neighbourhood of the rivers, where these can be taken advantage of to irrigate the adjacent lands, as they are in Spain, the dry country of Europe. There are a few spots here and there where it is even possible to produce corn without irrigation. One such spot is that lying to the east of the only important lake of the region, the Great Salt Lake in Utah, so called because, like other lakes which have no outlet, its waters are salt. The very presence of this lake causes the land on its east side to be favoured with an exceptional amount of moisture, for the vapour drawn up by the sun from the lake is carried eastwards by the prevailing winds, and condensed as rain by the adjacent mountains.

But, further, even where it is not profitable to cultivate the ground, it is still possible in many parts of this region to rear cattle, and this is the characteristic occupation among the white settlers. Cattle-rearing. The mode of life among these cattle-rearers is altogether peculiar, and so also are many of the names connected with it. The headquarters of a cattle station are known as a *cattle-ranch*, the owner as a *ranchman*, and the enclosure for cattle beside his house is called a *corral*, both ranch and corral being names derived from the Spanish and adopted from the Spaniards, who first followed this mode of cow-keeping in regions farther to the south.

During the summer, when the grasses are burnt up, the cattle are confined to the ranch and tended by the

ranchman and his herdsmen or 'cowboys,' all mounted, and all clad alike in bright-coloured flannel shirts and leather trousers, and wearing spurred boots and broad-brimmed felt hats. In the winter and early spring the cattle are driven out to the vast grazing grounds, where they are left entirely to themselves. The cattle of different owners mingle together, but each owner has a mark to distinguish his own animals; and some time in spring, before the calves have left their mothers, great gatherings, known as 'round-ups,' are held at certain fixed places, on the eve of the return to the cattle-ranches, and then the cattle of the different owners are gradually sorted out, and the new-born calves marked with the stamp of the owner of the mothers.

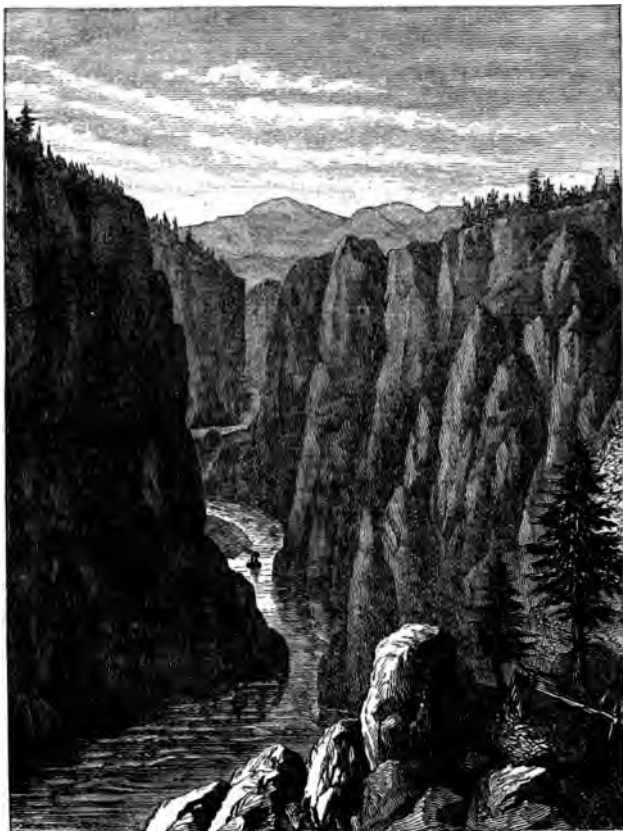
Timber also is among the products of this region, though it is confined to the mountainous part of it.

Timber. The area capable of growing timber is estimated at at least one-fifth of the whole, but the forest area is greatly diminished by the frequent fires, chiefly due to the uncivilised Indians. In this region, too, is to be found a vast proportion of the

Minerals. mineral wealth of the United States, especially of the precious metals, gold and silver. The States of Colorado and Nevada are among the most productive regions of the earth for both these metals. For silver, indeed, the latter is unsurpassed.

But what perhaps renders this region most remarkable is the very striking scenery that is to be found in certain parts of it. Most of the scenery, indeed, is monotonous and dreary to the last degree—vast treeless plains and plateaux. But there are certain districts

where the scenes are at any rate wonderful and striking, and, if not beautiful, often gorgeous in their colouring.



A CAÑON IN THE ARID REGION OF THE UNITED STATES.

One of these districts lies in the north. It is what *is known as the Yellowstone region, remarkable for its*

geysers and hot springs, surpassing those of Iceland, and likewise for its waterfalls and the precipices overhanging its rivers. But the region farther south, traversed by the Colorado and its tributaries, is in some respects even more extraordinary.

The Yellow-stone region.

Cañons.

Here the general face of the country is an expanse of naked rock beset with towering rugged cliffs, while the rivers flow at an enormous depth, sometimes as much as five thousand feet below the general surface, in narrow chasms known as *cañons*.¹ Such scenes would be forbidding in the extreme, were it not that the terrific grandeur of the outlines is relieved by the richness and splendour of the colours, especially under strong evening sunlight. The sides of the cañons and of the neighbouring cliffs are varied with bright bands of rose-red, pink and yellow, brown and amber. In other places they lie in deep shade, where these colours are softened and subdued. In the distance there are greens and purples, and all these are blended together and mingled with an infinite variety of hues and tints in such a manner as to render description altogether impossible.

LESSON XXXIII.

UNITED STATES (V.)—THE PACIFIC COAST; ALASKA.

THE fertile part of the Pacific coast is the smallest of all the divisions of the United States, but it is not

¹ A Spanish word, pronounced *canyons*.

without special interest. Its total area is about half as large again as that of Great Britain, and its population

Extent and
physical
features.

equal to about five or six to the square mile. It is traversed from north to south by two mountain ranges, one known as the Coast Range, about three thousand feet in height, keeping, as its name indicates, close to the coast, and the other, much higher, farther inland. The latter is known in the south by the Spanish name of Sierra Nevada, or Snowy Range, and in the north as the Cascade Range. These inner mountains lie very near the meridian of 120° W., which forms the boundary between this and the Arid Region.

In the northern part of this strip the rainfall is very abundant, and falls all the year round, but the farther south we go the rarer do summer rains become, and in the portion belonging to California rain never falls in summer at all, so that the wheat can be threshed in the open field.

Rainfall.

The most fertile part of the region is the long valley watered by the Sacramento in the north and the Joaquin in the south, between the Coast Range and the Sierra Nevada, a valley renowned for its wheat and wool, its wine and its southern fruits.

Agricultural
region.

In the mountains behind this valley there is wealth of another sort. Gold is found in remarkable abundance, and here, as in some other parts of the world, it was the discovery of this metal that led to the first great influx of immigrants. But besides gold, the mountains contain mineral treasures in the form of silver and quicksilver, as well as copper;

Minerals.

and, further, their sides are clothed with forests which are in some respects the most magnificent in the world.

These forests are the peculiar glory of the Californian mountains. They are magnificent for their extent, but in this respect they are surpassed by many others in other parts of the world. But what imparts to them such peculiar grandeur is the height of the trees of which they are composed.

The largest of all is what the Americans call the Big Tree or the Mammoth Tree, and what botanists call a species of *Sequoia*. Its average height is found to be about 275 feet, higher than all but our loftiest spires and towers, and its average girth not far short of seventy feet. It grows in a strip of forest about two hundred miles in length about the middle of the Sierra Nevada, and towards the southern extremity the forest is composed entirely of this one tree. In the north it is mingled with various firs and pines, but even these are gigantic in size.

Among the population of this section the Indians form, as in the Arid Region, a very considerable proportion, and they belong to a great variety of tribes and speak a great many different languages and dialects. An important element in the population is formed, too, by the Chinese, a people who began to immigrate into the Western States about twenty-five years ago. They are almost all men, and find employment chiefly as messengers, laundrymen, market-gardeners, and in various light occupations. By the bulk of the labouring population the utmost hostility is shown to them, chiefly on account of the small wages

for which they are willing to work, which makes it difficult for European labourers to compete with them.

The chief city in this section of the United States is San Francisco, situated on a magnificent inlet on the west coast of California. Its history is a repetition of that of Chicago. Though occupying a site which was settled as far back as 1777, it was a place of no consequence as late as 1850, but in thirty years from that date it had a population approaching a quarter of a million. Its rapid rise was due to the discovery of gold in 1848, which led to the first great rush of settlers to California. It is the western terminus of the first line of railway laid completely across the American continent, a line completed on the 10th of May, 1869.

Of the territory of Alaska, on the north-west of British North America, little need be said. Vast as it is (larger than Austria, Germany, and the United Kingdom combined), it lies too far north to be very productive. At present the territory is chiefly valued for its furs, obtained for the most part from the fur-seals and sea-otters frequenting its coasts and islands. Timber, indeed, is abundant, and the climate, owing to its westerly situation, is, like that of Norway, much warmer than might be expected from its latitude, so that barley has been grown at Fort Yukon, within the Arctic Circle. But the vegetable resources of the territory are, so far at least, of little account commercially. The territory was purchased from Russia in 1867.

LESSON XXXIV.

MEXICO AND CENTRAL AMERICA.

IN passing from the United States to Mexico we mark a great change in many respects. We pass from a region in which vast plains, gradually rising into table-lands, separate the ranges of mountains, to one in which the highlands stretch almost from sea to sea, leaving, for the most part, only narrow strips of lowland adjoining the coast. We pass from a region in which earthquakes are rare, and hot springs are the only signs of volcanic action, to one in which volcanoes are numerous and earthquakes frequent. We pass from a region in which the climate is more or less temperate to one in which a temperate climate is obtained only at a great elevation, and in which the year is divided into a dry season and a rainy season, as is the rule in tropical countries. We pass from a region in which people of European origin, and generally speaking the English language, are not only the dominant race, but make up by far the greater number of the population, to one in which the Spanish language takes the place of the English, but in which the great majority of the population (at least nine-tenths) is composed of native Indians or of half-castes. And finally we pass from a region in which the enterprise of the settlers is amazing, and the development of the resources of the country keeps pace with that of the most civilised countries of Europe, to one in which the people are of an indolent disposition, and

Contrast
with the
United
States.



TRAVELLING IN MEXICO.

the productions of the country are much less than they might easily be made.

The contrast is all the more striking when we compare the most populous parts of Mexico with the nearest populous parts of the United States. For in the north these are separated by a vast desert, or nearly desert, area in which the population is very thin. The most densely-peopled region of Mexico is the plateau of Anahuac, to the south of the Tropic of Cancer. Here, on an area not very much larger than that of Great Britain, are congregated at least two-fifths of the entire population, although Mexico has in all an area more than nine times as large as that of Great Britain.

On this plateau lie all the chief towns—Mexico itself, Guadalajara, Puebla, and others—and here we may observe what is most characteristic of Mexican civilisation. The farms, or *haciendas*, as they are called, are of vast size—it may be fifty square miles or more in extent; and the aspect of the farmhouses at once shows that there is less security for life and property than in the parts of America ruled by people of British blood. They are indeed defended like castles.

The products of such farms are not so different from those of Europe as one might expect from their position within the tropics. This is due to the fact that the plateau lies at the height of about 7,500 feet above sea-level, and hence belongs to what is called the cold region of Mexico, where the climate is suited to the growth not only of maize (which furnishes the principal food of the people), but even of wheat and barley.

There is one product, however, which is quite distinctive, and forms a very marked feature in Mexican agriculture. This product is the *agave*, or The American aloe or maguey. American aloe, called in Mexico the *maguey*. It is a plant with which we are now familiar enough in greenhouses, and even in our parks and gardens. It has a rosette of long thick sharp-pointed fleshy leaves, well adapted to retain sap. After growing for years in this condition it at last sends up a tall flowering stalk from the centre. But just before doing so it forms in the centre a large amount of sugary sap, and it is for the sake of this sap that the plant is cultivated. The agave is consequently not allowed to flower, but when just about to do so the sap is collected by piercing the heart of the plant. The sap is then allowed to ferment, after which it forms the favourite drink of the Mexican people, the drink called *pulque*.

In descending from the plateau, we enter successively the so-called temperate and hot regions of Mexico.

The temperate and hot zones of Mexico. The latter is not only hot, but excessively moist and unhealthy, especially on the Gulf of Mexico. Here rains fall from time to time, even during what is considered the dry season, and during the rainy season they never fail until the season is over. It is these lowlands which yield such tropical products as coffee and cocoa, sugar, tobacco, vanilla, cochineal, and various sorts of valuable timber and dye-woods.

The richness of Mexico in silver has already been mentioned in the general lesson on the Productions of North America.

The government of Mexico is like that of the United

States. Twenty-seven independent states are united to form a confederacy.

Government.

Railways are still few here, but an important addition to the railway system has recently been made by the completion of the line across the northern desert, connecting Mexico with the railways of the United States.

The territory to the south of Mexico, occupying the narrowest part of the North American continent, is chiefly divided among five small republics, the largest of which have an area little more than half that of Great Britain, while the population does not in any case exceed a million and a half. The elements of the population are much the same as in Mexico. The general appearance of the surface is likewise similar to what we find in the last State. The land is mostly high, and the mountain peaks are almost all volcanoes. The table-lands are, however, lower than in Mexico, and as the region lies still nearer the equator, the cool tracts are limited in extent. Hence the chief

Agricultural products.

products are all tropical. Coffee is the most important, but besides coffee the products include cacao, sugar, tobacco, rice, cochineal, india-rubber, vanilla, and various drugs. The indigo of Central America is the best in the world. It is grown chiefly in San Salvador on the Pacific coast, and along the same coast farther north there is a narrow strip extending for a considerable distance which produces the so-called balsam of Peru.

The forests yield many valuable trees, and the port of Belize on the east coast is a great place of export for mahogany. That port, which has the only good

harbour on the Atlantic coast, belongs to that portion of Central America which is under British sway, and is known as British Honduras, the total area of Forest products. which is about equal to that of the counties of York and Durham, while the population is only about twenty-five thousand.

LESSON XXXV.

SOUTH AMERICA.

GENERAL PHYSICAL FEATURES.

SOUTH AMERICA is a vast peninsula, being washed on all sides by the sea, save where it is attached to North America by the narrow neck of land called the Isthmus of Panama. In shape it is roughly triangular, and thus bears some resemblance to Africa. Like Africa too, and in a less degree like North America, it is broadest towards the north, and tapers gradually to the south. This great wedge-shaped block of land presents on the whole a simple and unbroken outline; it throws out but few peninsulas, it is cut into by few bays; and in these respects it offers a notable contrast to the northern half of the American continent.

South America lies between 13° N. and 56° S., and between 35° and 82° W. long. Neither of these facts is without interest, although they are apt to be passed over without attention. First, notice where the continent covers the greatest number of degrees of longitude. It is near the equator, where degrees of longitude are *longest*. And since the broad part of the wedge lies

there, while the tapering part lies in the temperate zone, where the degrees of longitude become shorter and shorter as we retire from the equator, it follows that this continent has a much larger area within the torrid zone than you might expect from its limits in latitude. 'It extends beyond the torrid zone for nearly as many degrees as it lies within it (thirty-two as against thirty-six), yet nearly four-fifths of the area of the continent belongs to the torrid zone.

Consider now the latitude more particularly. In the north the continent remains more than ten degrees short of the Tropic of Cancer; and though in the south it advances a considerable distance into the temperate zone, much farther indeed than any of the other great land-masses of the southern hemisphere, yet its southernmost point corresponds in latitude only to such places as Edinburgh, Copenhagen, and Moscow in Europe. This fact is worth remembering for its own sake, but it will be shown to be still more interesting when we come to the lessons on Climate,¹ for we shall then see, on comparing South America with Europe, a beautiful illustration of the effect of other circumstances besides distance from the equator in determining climate.

The greatest length of the continent from north to south is about 4,800 English miles, and the greatest breadth from east to west about 3,200. The area is about seventy-seven times that of Great Britain. The shores of the continent are washed on the north by the Caribbean Sea, on the east by the Atlantic, and on the west by the Pacific Ocean, while on the south

¹ See Lessons XXXIX., XL.

the mainland is severed by the Straits of Magellan¹ from the archipelago of Tierra del Fuego. The most southerly point on these islands is Cape Horn.²

A magnificent chain of mountains, the Andes, extends along the whole of the western seaboard of South America, and in some places borders so closely on the Pacific Ocean as to form the coast-line. In other parts of the continent there are two important mountain systems, one being in the east of Brazil, and the other, usually known as the mountain system of Parimé, lying to the north of the same territory. The former consists of a series of mountain chains lying behind one another parallel to the Atlantic seaboard, and extending a long way inland; the latter of a highland region, the greatest length of which runs east and west.

By these mountains and highlands, the land between the Andes and the east coast is divided into three separate plains of vast extent. A great river, swollen by many tributaries, flows through each of the plains to the Atlantic. The most northerly river is named the Orinoco, the middle one the Amazon, and the southern the Rio de la Plata. Though all the plains drained by these rivers are very extensive, the most northerly of the three is much smaller than either of the other two.

Such are the main outlines of the geographical framework of South America—a region full of interest and grandeur.

¹ Named after Ferdinand Magalhaens, a Portuguese navigator, who discovered the straits early in the sixteenth century.

² So named from Hoorn in Holland, the birthplace of one of the Dutch navigators who in the early part of the seventeenth century *first sailed round the point*.

LESSON XXXVI.

SOUTH AMERICA—MOUNTAIN SYSTEMS.

IN describing the mountains of South America the first place must be assigned to the magnificent range of the Andes. This range is remarkable for its great length, for the enormous height of many of its summits, for its numerous volcanoes, and for the high and extensive table-lands which its branches enclose. The Andes extend with scarcely any interruption along the whole length of the west coast, and the mountainous islands which fringe the coast of Southern Chile are often considered to form a continuation of the chain. On this view almost the whole range is double; but if we look to the mainland alone, we find that from the southern termination to a point a few degrees north of the Tropic of Capricorn the Andes form a single prominent chain; but from thence to a point a few degrees north of the equator they are divided in some places into two, and in others into three, separate ridges, which, after running for some distance parallel to each other, converge and are united into groups, or, as they are generally called, *knots* of mountains. Finally, a little to the north of the equator the range splits into three branches, each of which follows a different direction from the others and has a separate termination, one on the Isthmus of Panama and the others on the coast of the Caribbean Sea.

The slope of the Andes on the Pacific side is steep, but on the eastern side it is more gradual, descending

by extended spurs and terraces into the plains. The height of this range varies considerably in different parts, for while some of the peaks are among the loftiest in the world, others do not quite reach the level of the higher mountains in Scotland. The range attains its greatest elevation in the peak of Aconcagua, which reaches a height of over 22,000 feet.¹



A NATIVE OF THE ANDES OF PERU.

Of the table-lands or plateaux, which form so distinguishing a characteristic of the Andes, one of the most remarkable is that of Titicaca, which has a mean elevation of 13,000 feet, and, with the exception of one in Asia, is the highest in the world. It is situated between Peru

¹ Aconcagua, according to M. Pissis, is 22,210 feet in height. Sorata is 21,470 feet (Minchin); Chimborazo 20,697 (Reiss); and *Illimani* 20,112 (Wiener). Earlier measurements gave greater *altitudes* for all these peaks.

and Bolivia, and is one of those bleak highland plains which were referred to in the last lesson, and which are here generally known as *punas*. We may judge of its extent from the fact that it contains a lake—Lake Titicaca—which has an area nearly equal to the united areas of Devonshire and Cornwall. On the surrounding mountain slopes the dwellings of man are found at an elevation of more than 15,000 feet—that is to say, there are people living at a height equal to that of the summit of Mont Blanc. Another table-land, that of Quito, lies at an elevation of about 10,000 feet, and, though it is immediately under the equator, it yet enjoys a climate of perpetual spring. The fields here are richly cultivated, and the pastures covered with flocks of sheep and llamas.

Round this table-land are ranged some of the loftiest volcanoes in the world. The most famous is Cotopaxi, a snow-capped, cone-shaped mountain nearly 20,000 feet high.

The whole region of the Andes is subject to frequent and often terrible earthquakes. The city of Lima has been six times almost entirely destroyed, and is, in consequence, sometimes spoken of as the 'City of Earthquakes.'

Earth-
quakes fre-
quent in the
Andes.

The mountain system of Parimé lies north of the equator and forms the watershed between the basins of the Orinoco and the Amazon. Its general formation is that of an elevated table-land with hills rising from it in separate ridges and clusters. Although none of these are very high, some of their summits present a striking appearance from the curious flatness of their tops.

Mountain
system of
Parimé.

The mountain system of Brazil extends almost from the equator to a few degrees south of the Tropic of Capricorn, and consists principally of three parallel ranges running from north to south. Other ridges shoot out from these ranges, and intervening table-lands connect the whole into one system.

Mountain
system of
Brazil.

LESSON XXXVII.

SOUTH AMERICA—RIVERS, PLAINS, AND LAKES. (I.)

THE rainfall of South America will be explained when we have to describe its climate, and we only refer to the subject here because in speaking of the rivers of South America it is necessary to state that the tropical portion of the country lying east of the Andes is watered by exceptionally heavy periodical rains. This fact, considered in connection with what has been said in the preceding lessons, explains the extraordinary size of some of the South American rivers. A large proportion of the country is occupied by three vast plains, bordered on the west by an extensive mountain range, and separated from each other by minor ranges. Here, then, is a combination of circumstances highly favourable to the formation of large rivers. The mountains serve as storehouses of snow and rain, and afford continuous supplies of water alike during the dry and the wet seasons, while each of the three plains serves as a distinct basin in which countless *streams* collect and form at last one enormous river.

Causes of
the extra-
ordinary size
of some of
the rivers.

The most northerly of the great rivers is the Orinoco. The source of this river has never been exactly explored, but it is known to be somewhere about two hundred miles to the east of Duida, one of the highest mountains in the southern portion of the Parimé range. After leaving its source the Orinoco flows westwards for some distance, and then, changing its direction, winds round the western and northern slopes of the Parimé mountain system, until it finally reaches the Atlantic. It receives in its progress numerous tributaries both from the ranges of the Parimé system and from the Andes. Some idea may be formed of the size of this river from the facts that it is navigable for a distance of nearly a thousand miles from its mouth, and that the area of its basin is estimated to be 300,000 square miles. The greater part of the northerly course of the river has its navigation interrupted by a series of cataracts.

The upper basin of the Orinoco is for the most part covered by impenetrable forests, while the lower basin includes the extensive tracts generally known as the *Llanos*. The *Llanos* cover an area nearly double that of Great Britain, and although occasional hills occur, yet there are parts so level that it is possible to travel over them for hundreds of miles without encountering a single eminence of a foot in height.

In the time of Humboldt, a German traveller who spent much time in exploring South America in the beginning of the present century, these vast plains were almost devoid of trees. Forests were indeed generally found fringing the river-banks, and clusters of palms encircled the standing waters, but the rest of

The Orinoco
River.

The basin
of the river;
its forests,
llanos, and
delta.

the plain was described by him as a vast 'sea of grass' stretching on all sides to the horizon, unvaried even by a shrub. More recent travellers, however, tell us that all this is changed now, at least over a large part of the Llanos. Treeless tracts do, it is true, still occur, and they become more frequent the farther one goes to the south; but these absolutely unwooded areas are comparatively small in extent. There are no longer any such seas of grass extending to the horizon as Humboldt depicted.

During the heavy periodical rainfall which begins in March the Llanos and the forests on the river-banks are extensively flooded, and the inundated parts of the country then present the curious aspect of a vast lake with trees growing in irregular rows and clumps out of the water. In October the downpour ceases, the floods subside, and the damp soil becomes clad with luxuriant grass. But as the dry season sets in, and the unmoistened plain is exposed day after day to the burning rays of the sun, the grass is gradually shrivelled up, and the Llanos, lately so verdant, are converted into arid expanses over which the dust sweeps in clouds.

The Orinoco forms at its mouth a very extensive delta, which is covered with forests consisting almost exclusively of one particular kind of palm-tree. This delta is also submerged in the rainy season, and the inhabitants are therefore obliged to build their houses, as birds do their nests, up in the trees, as otherwise they would be under water for several months every year. The construction of these houses is very simple. The Indian first selects four palm-trees growing at short and nearly equal distances from each other, and by means of cords fastens four beams

Tree-houses.

horizontally to the stems at equal heights from the ground, so as to form a level framework. He then lays cross-beams on this framework, to serve as supports for the floor, and covers them with strong palm-leaves. Over the leaves is spread a thick coating of mud, which, when it has been baked hard and dry by the sun, forms a solid floor. At some distance above the floor a roof is constructed in much the same manner, except that it is covered with mats instead of mud. The houses have no sides, for in so warm a climate people only require protection from the sun and rain. All the materials of these airy dwellings are, with the exception of the mud, obtained from the palms, even the ropes being twisted and mats woven out of the tough fibres of the leaves. The appearance of the houses is very curious, especially at night, when numerous wood-fires are seen blazing high up among the trees and illuminating with their glow the figures of the Indians as they sit cooking their fish and baking their cakes.

LESSON XXXVIII.

**SOUTH AMERICA—RIVERS, PLAINS, AND
LAKES. (II.)**

SOUTH of the Parimé mountain system is the River Amazon, which discharges a larger volume of water into the ocean than any other river in the world, and enters the Atlantic with such force that its waters remain distinguishable from those of the ocean for a distance of three or four hundred miles from

The
Amazon.

its mouth. Various estimates have been given of the extent of the basin of the Amazon, but it may be said roughly that this river, with its tributaries, drains an area equal to about one-third of South America. The Amazon, broadly speaking, flows from west to east, and the sources of its largest tributaries are situated in the Andes. Like the Orinoco, the Amazon is subject to annual inundations, but they are less regular in their occurrence than those of the Orinoco, and do not take place at the same time of the year. The Amazon begins to rise in November, and reaches its greatest height in the early part of June, after which it gradually subsides, and is at its lowest level during September and October.

The river and its tributaries are navigable throughout the greater part of their respective courses, and they form as a whole the most splendid system of inland water-communication in the world. The navigation of the Madeira, its principal tributary from the south-west, is, however, interrupted, like that of the Orinoco, by a series of falls and cataracts. These occur over about two hundred miles of its course, where it enters Brazil from Bolivia, and thus prevent the water communication between these two countries. The navigation of the Amazon itself is rendered easier by the fact that the trade-winds blow continuously up the river, and therefore against the stream. A small river, called the Casiquiare, connects the Orinoco near its source with one of the upper tributaries of the Upper Amazon, and forms a navigable communication between these two rivers.

The great plain watered by the Amazon and its

tributaries is, for the most part, covered with magnificent and dense forests. These wooded portions are called *selvas*, from a Spanish word meaning Selvas of the basin of the Amazon. woods. Parts of the plain are, however, not wooded, but consist either of a loose sandy soil producing only a few stunted herbs, or of grassy undulating meadows.

The name of the Rio de la Plata¹ is specially applied to a long wide estuary formed by the junction of two rivers, the Parana and Uruguay, but it The Rio de la Plata. is also used when we wish to include under one name the estuary and these two rivers with their tributaries.

The Parana and the Uruguay both rise in the Brazilian mountains and flow in a southerly direction. About a thousand miles from its source, the Parana receives its largest tributary, the Paraguay, which rises in the Brazilian mountains, but is also fed by several large streams from the Andes.

The Rio de la Plata has its greatest length from its mouth to the source of the Paraguay; measured thus, it is over 2,800 miles long.

On account of its navigation, the Paraguay is by far the most important of all these rivers. Its course lies alongside of the southern plain of South America, and thus keeps clear of the mountains, where rocky beds are so apt to occur, and hence it is capable of being navigated by large steamers even into the interior of Brazil.

The portion of the southern plain lying west of the Paraguay in its middle course is known as *El Gran*

¹ 'River of silver' (Spanish).

Chaco,¹ and, although containing sterile tracts, is distinguished in the neighbourhood of the rivers by the beauty of its palm groves. The southern portion of the basin forms the beginning of what are generally called the *Pampas*, from an Indian word meaning plains. But the *Pampas* extend southwards far beyond the basin of the Rio de la Plata, to the banks of a river which rises in the Andes, and has the same name as one of the tributaries of the Amazon, the Rio Negro. The *Pampas* are for the most part vast, treeless, grassy meadows, which bear some resemblance to the more naked parts of the Llanos of the Orinoco, with this difference, however, that the Llanos lie where there is a marked distinction between a rainy and a dry season, whereas in the *Pampas* the rainfall is more irregular. Here and there they are thinly wooded, and some extensive tracts are covered during a part of the year by thickets of thistles, which shoot up in the spring, and, growing close together, soon become so tall and strong as to be almost impenetrable.

South of the Rio Negro are the Patagonian *steppes*, which fill in the whole southern extremity of South America between the Andes and the Atlantic, and are little more than a desert.

Besides the three great rivers which have been briefly described, South America possesses many others which in Europe would be considered very large, but which sink, when contrasted with the Amazon or the Rio de la Plata, into comparative insignificance. One of the largest of these

Basin of the
Rio de la
Plata; the
Gran Chaco
regions; the
Pampas.

Patagonian
steppes.

Magdalena
and other
secondary
rivers.

¹ Spanish, 'The great hunting-ground.'

secondary rivers is the Magdalena. This stream waters the long valley lying between the two northerly spurs of the Andes, which terminate, as we have already seen, on the shores of the Caribbean Sea.

The rivers flowing into the Pacific from the western slope of the Andes are all of inconsiderable length, a natural consequence of the close proximity of the mountain range to the ocean.

A curious characteristic of South America, and one which specially distinguishes it from North America, is

the small number of its great lakes. The

Lakes. Andes, it is true, contain Lake Titicaca, as already mentioned. From the southern end of this lake a river, called the Desaguadero, carries off its waters to a smaller lake, named Aullagas, which, curiously enough, has scarcely any visible outlet. Lake Maracaybo, which is situated near the mouth of the Magdalena, and connected by a narrow channel with the Caribbean Sea, is also of considerable size, but this is a brackish-water lake. Although South America contains but few permanent fresh-water lakes, yet large bodies of water are formed during the wet season in the course of some of the rivers, and to these the name of lake has sometimes been applied. Thus the overflow of the Paraguay forms every year a body of water called Lake Xarayes, which covers an area almost equal to that of England.

South America also contains several salt lakes, which, during the summer, are frequently converted by evaporation into fields of snow-white salt, two or three feet in thickness, and covering the plain for several miles. The Patagonian steppes, and the region between

the Gran Chaco and the Pampas, are especially rich in the salt lakes, and the salt extracted from them forms the chief export of this part of South America.

LESSON XXXIX.

SOUTH AMERICA—CLIMATE AND VEGETATION. (I)

IN studying the climate of South America we have, as in other cases, to consider the subject under two aspects—first as regards rainfall, and second as regards temperature; and under both of these aspects we shall find that this continent presents features peculiarly instructive and interesting.

Taking up first the question of rainfall, we may observe as the most prominent fact in this part of the

New World that, except within a few degrees
Rainfall.

of the equator, there is a marked contrast in the rainfall on the opposite sides of the Andes. The whole of the portion north of the equator, as well as the whole area to the south as far as about lat. 4° S., has a plenteous rainfall, such as is generally characteristic of tropical countries, a rainfall mostly confined to a certain season of the year. But on the west side of the Andes the rains suddenly cease about the latitude mentioned, and from that limit to about lat. 30° S. there follows a desert strip of coast-land, the like of which is hardly to be seen on any other coast in the world. On the east side, on the other hand, the rainfall within the same

limits is almost everywhere adequate, and throughout the greater part of the area it is marked by tropical abundance.

To understand the explanation of this grand distinction between the east and west sides, it is necessary to know something of the prevailing winds of tropical seas, the so-called trade-winds. This name is given to winds constantly blowing on both sides of the equator, in the Atlantic and in the Pacific Oceans. In the north they blow from the north-east, in the south from the south-east. In the Atlantic their domain extends, roughly speaking, for about thirty degrees on each side of the equator. As they advance over the heated tropical seas they constantly suck up moisture, and this moisture is liable to be condensed as rain as soon as the air which carries it becomes cooled. Such cooling takes place whenever the moisture-laden winds are forced to ascend to higher regions of the atmosphere, and it is obvious that this must be brought about when they pass from the ocean and meet with elevations on the land. Moreover, the higher the mountains, the higher will the air be forced to ascend, and the more effectually will it be drained of its moisture.

Keeping these facts in view, consider now the physical features of the South American continent as already described. In the east of Brazil, south of the Amazon valley, there is a series of parallel mountain ranges directly facing the south-east trade-winds, and these accordingly deprive the air swept over them of a portion of their moisture. The plateaux to the west, the so-called Campos of Brazil, are,

The trade-winds, and their effect on the rainfall.

The Campos.

in consequence, comparatively dry. Their rainfall is indeed sufficient to support a certain kind of vegetation, but is not plentiful. The winds, however, continue to advance, and they then strike against the still loftier range of the Andes. There they are compelled to ascend into still higher and colder regions, to precipitate still more of their moisture; and these slopes are thus almost all the year round favoured with copious supplies of rain.

In the Amazon valley what happens is somewhat different. There are there no mountains in the east to cut off a portion of the moisture drawn from the Atlantic. The vast forests likewise favour the deposition of rain, and hence the higher we ascend that valley the more copious do the rains become, the longer does the rainy season last, and the slopes of the Andes at the head of the valley are as plenteously supplied with rain as those both north and south.

But from the source now indicated it is easy to understand that the western slopes of the Andes and the narrow plains at their base can derive no moisture whatever. Yet that is not in itself enough to account for the absolute drought that distinguishes that coast region. Two other circumstances must be taken into consideration before we can fully understand the entire absence of rain on the coast of Peru, and the still more desolate desert of Atacama farther to the south. One of these circumstances is the fact that this part of the coast of South America is washed by a cold sea-current from the south. Were it not for that current this coast strip might derive some moisture from the Pacific, but being so much colder

than the ocean in these latitudes generally is, this current gives off comparatively little moisture by evaporation, and not enough to produce rain on the lowlands. That this current really has to do with the drought of this region is proved by the fact that the sudden change of climate at 4° S. already referred to takes place just where it leaves the South American coast. The change from the barrenness of an arid desert to the rich luxuriance of a moist tropical clime seems almost magical.

Yet one thing more must be borne in mind as part of the explanation of this singular drought. In all probability the drought would not be so extreme were it not that the Andes have another effect besides that already mentioned. If that lofty chain did not exist we may well believe that some moisture-laden air would be drawn in from the Pacific from beyond the limit of the cold sea-current. Over vast continental areas within the tropics the sun has a powerful effect in rarefying the air, especially at those seasons when it is directly or nearly overhead. This necessarily brings about a great inflow of air from the ocean. If the Andes did not exist, there can be little doubt that, notwithstanding the fact that the general tendency of the winds in the tropics is towards the west, part of this inflow would come from the Pacific. But as it is, the Andes serve as a barrier to cut off the Pacific area from the influence of this rarefaction.

LESSON XL.

**SOUTH AMERICA—CLIMATE AND
VEGETATION. (II.)**

ON the east side of the Andes the rainfall becomes more and more irregular, less and less clearly divided between wet and dry seasons, the nearer we approach the limit of the trade-winds; but down to about lat. 30° S. it generally reaches an average of at least twenty inches in the year, which is enough for the support of the kind of vegetation that has already been described as belonging to the Pampas. To the south of that limit, however, the contrast on the two sides of the Andes is exactly reversed. The west side becomes the rainy side, the east the dry one, and the Andes themselves again contribute to explain the contrast. In this part of South America we are in the latitude that corresponds to some extent in climate with that portion of Europe to which the British Isles belong. As with us, the prevailing winds are more or less from the west, and it is these that carry the moisture. But while in Britain the rain-bearing winds are from the south-west, in this part of South America, which lies in the southern hemisphere, the corresponding winds are from the north-west. In both cases the winds blow from warmer parts of the ocean, where evaporation goes on rapidly, to cooler shores, where much of the moisture falls as rain. But an important difference is caused by the difference in the disposition of the mountains. In Britain, as also in Scandinavia, the south-west winds are able, so to speak, to

Rainfall
south of
lat. 30° S.

get behind the mountains, so that they carry to the eastern parts a considerable share of moisture. In South America, however, the Southern Andes are so situated that they cannot but arrest the moisture-bearing winds from the north-west, and we may imagine these winds as being squeezed against the mountain-sides like a sponge, till at last they become practically dry before they sweep over the bleak steppes of Patagonia. In this region, accordingly, the tracts west of the Andes, including the fringing archipelago in the extreme south, have a moister and moister climate the farther they lie to the south.

Regarding the temperature of South America, the only thing that need be specially noted is that many parts of that continent have a much colder climate than corresponds with the latitude, especially when we compare it with similar latitudes in Europe and Africa. Some of these tracts are of course the table-lands, the climate of which has already been spoken of. But the remark just made is true also of certain lowlands. The cold current in the west which deprives so much of the coast strip of moisture likewise cools the air. The sea current is accompanied almost all the year round by a cold wind blowing fresh and keen from the sea. Even at Lima, twelve degrees from the equator, the nights are so cold that one cannot well sleep without heavy blankets, and for half the year the sun even at noon cannot pierce the heavy curtain of chilling mist which covers the sky.

The same exceptional coldness is found also in the south where the influence of the cold current is felt. You will remember that even the southernmost point of the continent is in about the same latitude as Edinburgh,



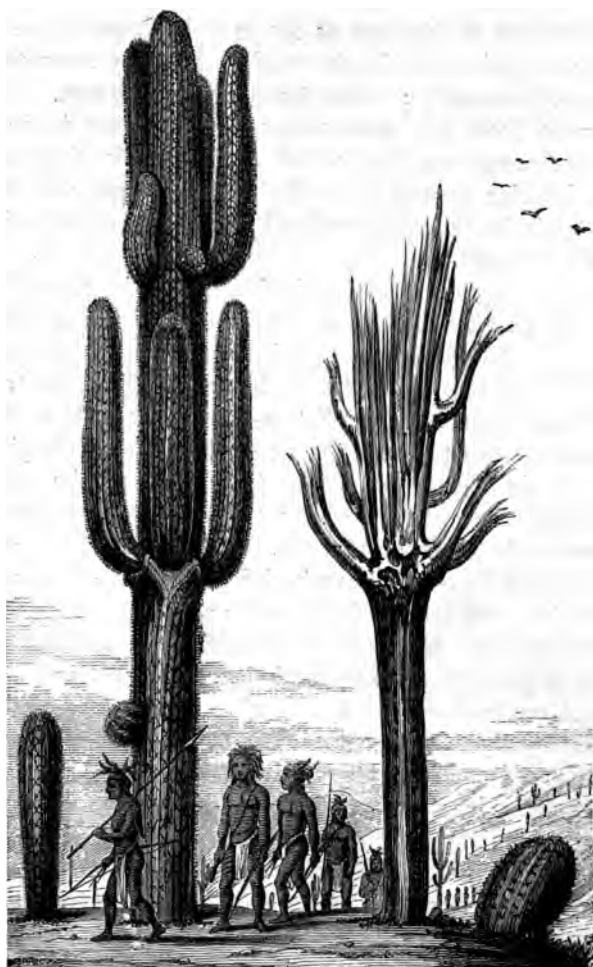
FOREST SCENE IN BRAZIL.

yet the climate of the whole of the western and southern part of the archipelago of Tierra del Fuego is one of the most miserable in the world. Rain or snow falls almost incessantly; violent tempests are frequent. Ten degrees from the southernmost point—that is, in a latitude corresponding to that of the middle of France—a glacier descends to the water's edge, and the channels in the neighbourhood are thickly strewn with small icebergs.

The vegetation of South America is in a peculiar degree illustrative of the distribution of the rainfall.

Vegetation. Everywhere, except in the Llanos, dense forests clothe those tracts in which the rains are copious. The so-called Selvas—that is, woods of the Amazon—are perhaps the finest example of tropical forests in the world. The trees present the most striking contrasts in colour and size, and the most remarkable diversity of form. Tree-ferns, palms, and ordinary foliage-trees are mingled together, their trunks, branches, and leaves clothed with a drapery of curious parasites, and most of the trees chained together by climbing and twining plants known as *lianas*.

A contrast to this is offered by the inland region immediately to the south, which is deprived to a large extent of its moisture by the intervention of the eastern mountains between it and the winds from the Atlantic. Forests are found here only on the borders of the water-courses; elsewhere the vegetation is characteristically that of a dry country, though different in appearance from the leathery-leaved trees and shrubs of the Mediterranean peninsulas. The prevailing form in the dry regions of America, and above all of South



DIFFERENT KINDS OF CACTUS.

America, is the cactus, a plant, or rather a large group of plants, without any leaves, but with thick fleshy stems, often angular, often columnar, almost always more or less fantastic and grotesque in form, their surface clothed with thorns, yet often adorned by bright red flowers with many petals growing directly on the stem without any supporting twig or branchlet.

LESSON XLI.

SOUTH AMERICA—PRODUCTIONS.

AMONG the most important vegetable products yielded by South America are the barks of the various species of *Cinchona*.¹ The cinchona-trees grow chiefly on the slopes of the Andes, in Ecuador, Peru, and Bolivia. The bark has been largely used in medicine under the name of 'Peruvian bark,' and it is from this source that the drug called *quinine* is extracted. Quinine is extensively used as a tonic, and to allay fever. In tropical countries, where fever is common, it is so important to have a free supply of quinine that cinchona-trees have of late years been carried from South America to India, and they are now successfully cultivated in some of the hilly districts of Madras and in parts of the Himalayas.

Another medicinal plant largely used in South America is the *coca*. The dried leaves of this shrub,

¹ Pronounced *sin-kō'-na*. The name was given to the tree by the great botanist Linnæus, after the Countess del Cinchon, who was cured by using Peruvian bark.

mixed with lime, are extensively chewed by the Indians, especially in Peru. By taking coca the desire for food is lessened, great fatigue may be sustained, and the difficulty of breathing thin air at great altitudes is much diminished.

The coca-shrub just mentioned is to be carefully distinguished from the well-known cocoa-nut palm, as also from the tree which yields cocoa, or cacao. The cocoa-nut palm is widely distributed throughout the tropical zone, and, not being peculiar to South America, needs no description in this place. On the other hand, the cocoa or cacao-trees are confined to the warmer parts of South and Central America, and to some of the West Indian islands. The seeds, when roasted, are used in the preparation of the well-known beverage called cocoa.

A very characteristic South American beverage is an infusion of the dried leaves and young twigs of the Paraguay tea-plant. This plant, though popularly called a tea-tree, is closely related to the holly. In Brazil and Paraguay, where this 'tea' is extensively drunk, it is known as *yerba* or *maté*.

Throughout tropical America, especially in Brazil, one of the chief articles of diet consists of the thin flat cakes known as *cassava-bread*. This is made from a coarse meal which is prepared from the same plant as that yielding Brazilian arrowroot. The juice of the root is poisonous, and the term 'arrowroot' refers to the Indian practice of dipping the points of arrows into the juice in order to poison them. The poisonous principle is, however, readily expelled from the juice by heat. If the starchy matter which is washed from the

root of the cassava-plant be dried in the sun, it forms a white powder such as we know as common arrowroot; but if dried on hot plates and stirred while drying it forms *tapioca*.

It is to South America that we owe the potato. This useful plant is found native in the temperate parts of Chile and Peru, whence it was originally brought to Europe by the Spaniards in the beginning of the sixteenth century. It was afterwards introduced into England by Sir Walter Raleigh, and it was he who first cultivated it in Ireland, where it has since become so important.

The tobacco-plant is likewise a native of South America, but it grows also in the West Indies and in North America, and it was from these countries that it was first brought to Europe. Some kinds, however, such as that called *orinoco*, suggest by their names a South American origin. It is said that tobacco was originally introduced into Europe by Christopher Columbus, and into England by Raleigh.

Among the most remarkable vegetable productions of South America is the beautiful *Victoria regia*. This is a plant allied to the water-lily, but of such size that its leaves measure more than six feet across, while each of its beautiful white blossoms is upwards of a foot in diameter. The seeds, when roasted, are used as food, and the plant is sometimes called the water-maize. It is a native of the rivers of Brazil, Guiana, and La Plata. Although the *Victoria* water-lily was discovered in the early part of this century, and was noticed from time to time by several travellers, attention was not prominently directed to it until the year 1837, when it was

found by Sir Robert Schomburgk during his ascent of the River Berbice in British Guiana.

Many vegetable products with which we are more or less familiar recall by their names a South American origin. Thus 'cayenne pepper,' which takes its name from Cayenné in French Guiana, is prepared from the pungent fruits of various species of *capsicum* grown in South America and in the West Indies.



INDIANS COLLECTING INDIA-RUBBER.

Brazil-nuts are obtained from a tree found in the Amazonian forests, principally on the River Para. Some of the trees reach a height of 120 feet. Brazil-wood, the product of another Brazilian tree, is one of the commonest dye-woods, and yields various shades of red and yellow. Several South American trees furnish timber of great value.

Although india-rubber comes to us from various parts of the tropical world, some of the best is procured from trees which have their home in Brazil and Guiana. The

Indians make incisions in the trunks of the trees, and from these wounds there exudes a milky juice which hardens by exposure, forming a tough elastic solid.

Many of the plants which are of great value to the inhabitants of South America are not peculiar to that continent, but also flourish elsewhere under similar conditions of climate. Others, again, although now sources of great wealth to South America, have been introduced from other parts of the world. Among the more important vegetable products belonging to one or other of these classes we may mention bananas, yams, pineapples, and bread-fruit; maize, rice, and wheat; coffee, sugar, cotton, and indigo.

The European grains are far from holding so prominent a place among the products of South America as they do in the northern division of the continent. On the other hand, the domestic animals introduced by the Europeans, and especially horses and cattle, are here of the highest importance, and their importance is constantly increasing.

The most valuable mineral products of South America are chiefly found in the mountains. Gold is obtained from many parts of the Andes, and from the beds of a number of the rivers. Silver is found in great abundance, chiefly in the same range of mountains, and this range is so rich in copper that the name 'Andes' is supposed by many to be derived from a native word signifying copper.

The silver mines of Potosi on the Bolivian plateau (Upper Peru, as it was long called) have been famous since the time of the Spanish conquerors. Hardly less productive are those of Cerro de Pasco in Peru, a town

which is likewise notable as being the highest in the world, standing at the height of upwards of fourteen thousand feet above sea-level. The same precious metal is likewise abundant in the north of Chile, and there, also, is found a great wealth of copper. To the same State now belongs the district of Tarapaca in the western desert, with its vast deposits of nitrate of soda, which is so extensively used for manure and in the making of nitric acid.

South America also contains many valuable mines of iron, coal, lead, &c., but on the first discovery of the continent the precious metals were so eagerly sought for, that these useful though less attractive minerals were neglected, and their value is only now beginning to be appreciated. Diamonds, topazes, and other gemstones are found in the river-beds in the interior of Brazil, and emeralds are obtained from the United States of Colombia.

LESSON XLII.

PEOPLE OF SOUTH AMERICA.

IN the general lesson on the people of America, some account was given of the natives of the southern division of the continent, and in other lessons some glimpses of the peculiar mode of life of the inhabitants of certain parts of South America have been furnished. But the picture would be altogether incomplete without some additional information regarding certain of the inhabitants, distinguished either by their physical or mental

qualities, or by their curious habits. The pure races of Indians in South America now chiefly inhabit the banks of the Orinoco, the dense inland forests of Brazil, the Pampas, the desert plains of Patagonia, and the islands of Tierra del Fuego.

The tribes living in the dense forests along the Amazons are noted for their fierceness, and have the

Indians of
the Amazon
forests. reputation of
being canni-

bals, but the prevalence among them of this horrid practice has been much exaggerated, and there are but few instances of it which rest on trustworthy evidence. It is worth noting that the word *cannibal* is said to be a corrupt form of *caribales*—a name applied to the Caribs or Indians who dwelt in the islands



A BOTOCUDO WOMAN.¹

and on the coasts of the Caribbean Sea. The clothing of the Amazonian tribes is remarkably scanty. Many of them, indeed, wear nothing but feathers in their hair and bead ornaments round their necks and limbs, but they all paint their bodies, and some tattoo themselves. One of these tribes has a curious habit of preserving the head of

¹ The Botocudos are a tribe of the Amazon region. The lower lip is ornamented by the insertion of a round plug of wood.

a fallen enemy as a trophy of victory. The eyes are removed from the head and false ones inserted. The hair is carefully arranged and adorned with feathers, and the ghastly object is then hung on the walls of the successful warrior's dwelling as a household ornament. These Indians are skilled in the preparation of a certain poison, with which they smear the tips of their arrows, and which is so deadly that even a scratch from one of the poisoned arrows proves fatal in a few minutes. It is a characteristic practice of some of the forest Indians of South America to blow these poisoned arrows through tubes or blow-pipes. And it must not be supposed that these blow-pipes are used solely or even chiefly in war, for since the poison, deadly as it is, does not render animals killed by it unfit for food, they are constantly employed in the chase, as well for the procuring of food as for the destruction of beasts of prey.

The Indian of the Pampas is chiefly distinguished by his splendid horsemanship. Thus, in a skirmish he has been known, when going at full speed, to throw himself alongside of his steed, and, clinging on with one hand and one heel, to protect himself behind the animal's body from the shafts of his enemies.

The Patagonian Indians are also very good horsemen, but they are most remarkable for their great stature. A full-grown Patagonian is seldom under six feet, and sometimes is nearly seven feet high; and their apparent height is increased by their habit of wearing large mantles made from the long-haired skins of the guanaco, by their long flowing hair, and their general figure. The Pata-

Indians of
the Pampas.

Patagonian
Indians.

gonians live in tents and lead a wandering life, supporting themselves principally on the products of the chase.

The Gauchos, who are of partly Spanish and partly Indian descent, often have little Indian blood in them at all. These men live chiefly on the Pampas, where they lead a wild and solitary life. Like the Indians, with whom they are often engaged in warfare, they are splendid horsemen. The chief occupation of



LASSOING HORSES.

the Gaucho is breeding and tending cattle, and his herds provide him with all that he needs, as he is capable of subsisting for weeks together on beef alone, without any vegetable food. In the use of the lasso, an implement very generally employed in the management of cattle in America, the Gaucho is unsurpassed. The lasso consists of a long rope or ox-hide thong with a running noose at the end. With unerring accuracy

he can single out any animal that he wishes to capture and throw the noose over its neck, afterwards drawing the noose tight so that the captured animal cannot escape. Their mode of living and their mixed blood have rendered the Gauchos somewhat rough and wild, but, in spite of this, they still retain an element of Spanish courtesy and a sense of honour which has made a very favourable impression upon strangers who from time to time have travelled among them.

It is, from various reasons, extremely difficult to obtain a correct estimate of the population of South America, but it is probably not more than Estimate of the population. 25,000,000. On an average the country does not contain quite four inhabitants to the square mile, while England contains about four hundred inhabitants in the same space. The Indians form about four-tenths; the whites about two-tenths; the negroes about one-tenth; and the mixed races about three-tenths of the population. It is thus seen that the Indian element still largely predominates in South America.

LESSON XLIII.

THE STATES OF SOUTH AMERICA.

THE names of these states, with their capitals, their chief towns, and chief products, will be found in the appendix, and their position is best ascertained by referring to the map. In this lesson accordingly will be mentioned only a few general facts regarding these countries, and

a few specially noteworthy particulars with reference to one or two of them.

With the exception of the three portions of Guiana on the north, belonging respectively to Britain, France, and the Netherlands, all South America is Govern-
ment. claimed by independent states, which were at one time dependencies either of Spain or of Portugal. These states, being oppressively governed, threw off the yoke of the mother countries about the beginning of the present century, and since then the Spanish dependencies have all been republics, while the Portuguese territory of Brazil became an independent constitutional monarchy, with a ruler belonging to the royal house of Portugal, and bearing the title of emperor, at its head.

In most of the republics the change has not been a change for the better. The government passed into the hands of people unfitted by their history or by their natural qualities to exercise it.

The history of most of these countries has unfortunately consisted chiefly in a succession of contests for chief power among the ablest and most ambitious men, and civil wars to support the rival claims. Reckless foreign wars with neighbouring states have likewise added to the confusion of all the republics. Chile is the one in which the government has been most stable and most successfully conducted.

In Brazil the monarchical form of government has proved better adapted to the wants of the community than the republican form in most of the Spanish states. But here a great drawback exists in the institution of slavery, which always has a degrading effect on free labour. The slaves are negroes, like the former slaves

of North America and the West Indies, but according to a law now in force they are gradually becoming free, and the institution is thus in process of being abolished.

The means of communication, except where the physical features of the country afford the great water-ways already described, are very imperfect.

Means of communication. It is stated that at the present day there are not perhaps in all South America a hundred miles of what either the ancient or modern natives of Europe would call roads. Railways have now indeed been introduced, but their total length is necessarily small in proportion to the area of the country. Already they connect nearly all the most important centres of trade in the interior with the chief seaports; as La Guayra with Caraccas in Venezuela, Lima with Callao in Peru, Santiago with Valparaiso in Chile, Cordova and other inland towns with Buenos Ayres in the Argentine Confederation. In Peru, it should be mentioned, there are two of the most remarkable railways in the world, 'the railways above the clouds,' as they have been called. Both ascend to the plateaux between the chains of the Andes, that from Lima to Oroya reaching a height of at least 15,600 feet, and that from Arequipa to Puno (on the Bolivian plateau) about a thousand feet less. Where railways are absent, the general method of conveying merchandise across the mountains is by means of trains of llamas, mules, or donkeys.

Here also we must make mention of the Panama railway and the Panama canal, the former completed in 1855, and the latter (which is to follow the same course as the former) begun in 1881 and now in progress. From Colon, or Aspinwall, and Panama, the terminal points on

the east and west respectively, steamer routes diverge in all directions across the two great oceans, so that the canal when completed cannot fail to be of the highest importance to commerce. The territory in which the railway and canal lie belongs to the United States of Colombia.

Of all the states of South America Chile is the only one that produces grain for export; but on the other side of the continent, the pampas of Uruguay, Products. the Argentine Confederation, and the plains of Southern Brazil export immense quantities of food derived from cattle, as well as other products, such as hides, tallow, horns, horse-hair, and the like. It has been estimated that the Argentine Confederation can slaughter two million head of cattle every year; and the immense slaughter-houses of Buenos Ayres in that state, and Fray Bentos in Uruguay, have made these names familiar in our own country through the tins in which the salted meat is exported from them.

In tropical Brazil are grown all the products already mentioned in previous lessons as those of tropical America. But the great staples are coffee and sugar. In the Amazon region, wherever a clearing has been made in the virgin forest, the dark green rows of the coffee plant ascend the lower slopes, and the bright green sugar-canes fill the hollows. About half the coffee produced in the world is at present grown in Brazil.

APPENDIX.

EUROPE.

AREA AND POPULATION IN ROUND NUMBERS OF THE PRINCIPAL STATES.¹

Countries	Area in square miles	Ratio of area to that of Great Britain ²	Area of islands	Population in thousands	Pop. per sq. mile
Austrian Empire ³	242,000	2 $\frac{2}{3}$	1,300	37,880	157
Belgium . . .	11,400	$\frac{1}{10}$	—	5,500	485
Denmark . . .	15,400	$\frac{1}{16}$	9,500	1,980	128
Iceland. . . .	39,500	$\frac{1}{6}$	—	72	2
France	206,000	2 $\frac{1}{2}$	3,700	37,700	183
Germany . . .	209,000	2 $\frac{1}{2}$	1,000	45,200	217
Greece. . . .	25,000	$\frac{1}{11}$	3,900	2,000	80
Italy	111,000	1 $\frac{1}{2}$	19,000	28,500	255
Netherlands ⁴ .	13,700	$\frac{1}{17}$	640	4,400	320
Norway	126,000	1 $\frac{2}{3}$	8,600	1,900	16
Portugal . . .	34,400	$\frac{1}{7}$	—	4,160	121
Roumania . . .	50,700	$\frac{1}{5}$	—	5,400	106
Russia ⁵	2,011,000	22	42,000	85,000	41
Servia	18,800	$\frac{1}{13}$	—	1,800	97
Spain	193,000	2 $\frac{1}{3}$	1,900	17,000	88
Sweden	174,000	2	3,000	4,570	26
Switzerland . .	16,000	$\frac{2}{11}$	—	2,850	177
Turkey in Europe ⁶	59,000	$\frac{2}{11}$	4,000	4,500	71
E. Roumelia . .	15,000	$\frac{2}{11}$	—	800	55
Bulgaria . . .	24,700	$\frac{3}{11}$	—	2,000	81
Bosnia, Herzegovina, and Novi-Bazar . .	23,500	$\frac{3}{11}$	—	1,300	56
United Kingdom .	121,500	1 $\frac{1}{3}$	5,000 ⁷	35,300	290

¹ The smaller states of Europe are Andorra (174 sq. m.), a republic in the Pyrenees; Monaco (8 sq. m.), a principality on the Mediterranean between France and Spain; Montenegro (3,500 sq. m.), a principality in the west of Turkey; and San Marino (33 sq. m.), a republic in the Apennines in Italy. Liechtenstein (61 sq. m.) is a principality between Switzerland and Austria, which pays taxes and customs duties as if it were part of the Austrian Empire; and Luxemburg is a grand-duchy in the south-east of Belgium, of which the King of the Netherlands is the grand duke.

² The area of Great Britain, including the smaller islands round Great Britain, is in round numbers 90,000 square miles.

³ Not including Bosnia and Herzegovina, which are occupied and administered by Austria, though still belonging nominally to Turkey.

⁴ Including Luxemburg (1,000 sq. m.).

⁵ Including Finland (144,000 sq. m.).

⁶ *Exclusive of the provinces indented beneath.*

⁷ Smaller islands.

SEAS AND PRINCIPAL BAYS AND GULFS.

Seas, &c.	Position	Area in sq. miles ¹
White Sea	North of Russia	32,000
Baltic	Between Sweden, Russia, Germany, and Denmark	170,000
Gulf of Bothnia	Between N. Sweden and Finland	—
Gulf of Finland and Riga .	West of Russia	—
Baltic proper	Between S. Sweden, Germany, and Russia	—
Kattegat	Between Denmark and S.W. Sweden	—
North Sea or German Ocean	Between Great Britain and the N.W. of European mainland	205,000
Skager-Rack	Between S. Norway and Denmark	—
English Channel	Between England and France	—
Bay of Biscay	W. of France and N. of Spain	—
Mediterranean	Between Europe and Africa	960,000
Gulf of Lyons	South of France	—
Gulf of Genoa	N.W. of Italy	—
Adriatic Sea	Between Italy and the Balkan Peninsula	—
Archipelago or Ægean Sea .	Between the Balkan Peninsula and Turkey in Asia	—
Sea of Marmora	Between S.E. of Turkey and N.W. of Asia Minor	4,500
Black Sea	Between Russia and Asia Minor	164,000
Azof	South of Russia	14,500

¹ Exclusive of islands (after Strelbitsky's 'Superficie de l'Europe').

PRINCIPAL CAPES ON MAINLAND.

Name	Position	Name	Position
Kanin	N. of Russia	St. Vincent	S.W. of Portugal
Nordkyn	N. of Norway	Tarifa	S. of Spain
The Naze or Lindesnæs	S. of Norway	Spartivento	S. of Sardinia
Skawe or Skagen	N. of Denmark	Spartivento	S. of Italy
Gris Nez	N. of France	Sta. Maria di Leuca	S.E. of Italy
La Hague	N.W. of France	Passaro	S.E. of Sicily
Raz	W. of France	Matapan	S. of Greece
Ortegal	N.W. of Spain	Malia	S. of Greece
Finisterre	N.W. of Spain	Colonna	E. of Greece

LAKES AND ISLANDS.

Countries	Lake	Position	Size ¹	Islands	Position	Size ¹
Austria	Balaton . . .	W. Hung.	2			
Denmark	Neusiedler . . .	W. Hung.	1			
	—	—	—	Zealand . . .	E.	2.6
	—	—	—	Funen or Fyen . . .	E.	1.1
	—	—	—	Laaland . . .	E.	.4
France	—	—	—	Corsica . . .	S.	3.4
Germany	Constance or Bodensee	S.W.	2	Rügen . . .	N.	.3
Greece	—	—	—	Eubœa . . .	E.	1.3
	—	—	—	Corfu . . .	W.	.2
	—	—	—	Cephalonia . . .	W.	.3
	—	—	—	Zante . . .	W.	.1
	—	—	—	Cerigo . . .	S.	.1
Italy	Garda . . .	N.	—	Sicily . . .	S.	9.8
	Maggiore . . .	N.	—	Sardinia . . .	W.	9.1
	Como . . .	N.	—	Elba . . .	W.	—
Russia	Ladoga . . .	N.W.	7.0	Novaya Zemlya	N.	35.1
	Onega . . .	N.W.	3.7	Vaigatch . . .	N.	1.4
	Peipus . . .	W.	1.3	Kalgonef . . .	N.	1.3
	Saima ² . . .	N.W.	.6	Oesel . . .	W.	1.0
Scandinavia	Wener . . .	S.E.	2.4	Gothland . . .	E.	1.1
	Wetter . . .	S.E.	.7	Hindö . . .	N.W.	.8
	Mälär . . .	S.E.	.6	Senjenö . . .	N.W.	.6
	—	—	—	Oland . . .	S.E.	.5
Spain	—	—	—	Majorca . . .	E.	1.3
	—	—	—	Minorca . . .	E.	.3
	—	—	—	Ivica . . .	E.	.2
Switzerland	Geneva . . .	S.W.	2			
	Neuchâtel . . .	W.	—			
	Lucerne . . .	Middle	—			
	Zurich . . .	—	—			

¹ The figures before the point are to be read as thousands of square miles, those after the point as hundreds. Thus 1.3 means upwards of 1,300 square miles. Where no figure is given the area is below 100 square miles.

² This is one of the numerous large but not very important lakes in Finland.

MOUNTAIN RANGES.

Ranges	Position	Chief Peaks ¹
Ural Mountains .	Between Russia in Europe and Siberia	Töll-poss-is (5,540) Iremel (5,000)
Scandinavian Highlands . . .	Between Norway and Sweden	Sulitjelma (6,175) ; peak in Jötunfjelde or Giants' Mountains (8,550)
Alps . . .	Central Europe	—
Maritime Alps . .	Between France and Italy	Argentera (10,600)
Graian Alps . .	N.W. Italy	Grand Paradis (13,300)
Pennine Alps . .	Between Switzerland, France, and Italy	Mont Blanc (15,730) Monte Rosa (15,200) Cervin or Matterhorn (14,800)
Bernese Alps . .	Between Cantons Bern and Valais	Weisshorn (14,800) Finsteraarhorn (14,000) Jungfrau (13,700) Mönch and Schreckhorn (13,400)
Tyrolese . . .	W. of Austria	Gross Glockner (12,400)
Carpathian Mountains . . .	N. and E. of Hungary	Gerlsdorf Spitze (8,700)
Pyrenees . . .	Between France and Spain	Maladetta (11,200)
Sierra Nevada . .	South of Spain	Cumbre de Mulahacem (11,650)
Apennines . . .	Italy	Gran Sasso d'Italia (9,550)
	Italy	Vesuvius (volcano—4,160)
	Sicily	Etna (volcano—10,840)
Balkan Mountains .	Turkey	Chat-al-Dagh (8,340)
Rhodope Mountains	Turkey	Muss-alla (9,500)
Olympus Range .	Greece (Thessaly)	Olympus (9,750)
Cretan Mountains .	Crete	Aspra-buna (8,080)

¹ Height in feet in parentheses.

CHIEF TOWNS OF EUROPE.

[SEAPORTS and naval stations are printed in black type. The figures in parentheses give the population in thousands; where two numbers are given, the second is the population including suburbs; the name coming next after is that of the river on which the town stands, except in the case of seaports, when the name of the sea on or near which the town stands comes first; the words that follow usually indicate the nature of the trade or industry pursued.]

AUSTRIA-HUNGARY.

Vienna (726; 1100), Danube, capital of country.

Buda-Pest (361), Danube, capital of Hungary.

Prague (162; 294), Moldau, tributary of Elbe, capital of Bohemia.

Trieste (72; 133), Adriatic, great trade with the Levant, seat of Austrian Lloyd's.

Brünn (83), Moravia, tributary of Danube, capital of Moravia, woollens.

Szegedin (74), Theiss, trib. of Danube, place of trade in Hungary.

BELGIUM.

Brussels (166; 390), capital of country.

Antwerp (180), North Sea, Scheldt, principal seaport on the mainland of Europe, great transit trade in cotton, wool, flax, &c.; seat of oldest exchange in Europe.

Ghent (136), Scheldt, leather and cotton manufactures.

Liège (129), Meuse, great manufacturing centre in the midst of a productive coalfield; close by is Seraing, with immense ironworks.

BULGARIA.

Sofia (21), capital of principality.

DENMARK.

Copenhagen (235 ; 274), capital.

FRANCE.

Paris (2,269), Seine, capital ; centre of fashion.

Lyons (348), Rhone, at junction of Saône ; centre of silk industry.

Marseilles (270), Gulf of Lyons, principal seaport in the country.

Bordeaux (218), Bay of Biscay, Garonne ; corn, flour, wine, fruit.

Lille (145), near Somme, seat of manufactures.

Toulouse (127), Garonne, a celebrated ancient city.

Nantes (118), Bay of Biscay, Loire.

St. Etienne (115), Loire, coal-mining, various manufactures.

Rouen (106), Seine, centre of French cotton industry.

Havre (106), English Channel, Seine, trade with America.

Brest (69), Atlantic Ocean, naval station.

GERMANY.

Berlin (1,125), Spree, capital of Prussia and German Empire.

Hamburg (290 ; 448), North Sea, Elbe, principal seaport in Germany, extensive emigration.

Breslau (273), Oder, capital of Prussian province of Silesia, principal wool market in Germany.

Munich (230), Isar, tributary of Danube, capital of Bavaria, fine art centre.

Dresden (221), Elbe, capital of Saxony.

Barmen and Elberfeld (together 190), Wupper, tributary of Rhine, chief seats of silk, cotton, and woollen manufactures in Germany.

Leipzig (149), Elster, tributary of Saale, tributary of Elbe, centre of book trade of Germany, seat of the supreme courts of law.

Cologne (145), Rhine, an ancient Roman city, famous for *eau de Cologne* and for its magnificent cathedral.

Königsberg (141), Baltic, Pregel, corn and timber.

Frankfort-on-the-Main (137; 165), Main, tributary of Rhine, formerly a free city, great banking and exchange centre.

Hanover (123; 145), Leine, tributary of Werra, formerly capital of independent kingdom.

Stuttgart (117), Neckar, tributary of Rhine, capital of Würtemberg, one of centres of book trade of Germany.

Bremen (112; 123), North Sea, Weser, free town, second seaport in Germany.

Danzig (109), Baltic, Vistula, grain and timber.

Strassburg (104), Rhine, tobacco manufactures.

Nuremberg (100), centre of toy trade of Germany.

Magdeburg (98), Elbe, chief seat of sugar manufacture in Germany.

Chemnitz (95), in Saxony, seat of cotton manufactures.

Stettin (92), Baltic, Oder, grain and timber.

Lübeck (51), Baltic, Trave, free town, historically celebrated.

GREECE.

Athens (85), Ilissus, capital, anciently celebrated, birth-place of many eminent men; its port, **Piræus**.

Hermopolis (21), Ægean Sea, island of Syra, principal seaport.

Patras (25), Mediterranean, currants.

ITALY.

Rome (273), Tiber, capital, historically renowned, a centre of art.

Naples (468), Mediterranean, most populous city in kingdom, celebrated for the beauty of its situation.

Milan (296), Olona, tributary of Po, manufactures of silk.

Turin (230), Po, first capital of kingdom, manufactures of silk, velvet, &c.

Palermo (206), north coast Sicily, centre of tunny and sardine fishery.

Genoa (138), Mediterranean, now the principal seaport in the country, historically celebrated, manufactures of silks, velvets, ribbons, &c.

Florence (135), Arno, historically famous, birthplace of many eminent men, manufactures of articles in plaited straw, of silks, velvets, &c.

Venice (130), Adriatic, historically famous, commerce increasing, manufactures of ropes, silks, gloves, glass, &c.

Messina (77), Mediterranean, north-east of Sicily, sulphur, oil, wine, &c.

Bologna (104), Reno, tributary of Po, varied industry, seat of ancient university.

Catania (96), Mediterranean, east coast Sicily, sulphur, oranges, almonds, &c., snow from Etna, manufactures of silks and cottons.

Leghorn (78), Mediterranean, great trade with Levant, articles in coral made.

Brindisi (under 20), Adriatic, great steam-packet station, a place of great importance since the opening of the Suez Canal.

NETHERLANDS.

Amsterdam (361), North Sea, Ij, coffee and colonial produce, diamond polishing.

Rotterdam (166), North Sea, Maas (Meuse), wheat, madder, gin.

The Hague (131), seat of government.

Utrecht (74), Rhine, university town, various manufactures.

NORWAY.

Christiania (76), Skager Rack, Glommen, capital.

Bergen (84), Atlantic, great fishing centre.

PORTUGAL.

Lisbon (187 ; 246), Atlantic, Tagus, capital of country ; wine, vinegar, oil.

Oporto (106), Atlantic, Douro, wine, southern fruits, seat of cotton and other manufactures.

ROUMANIA.

Bucharest (221), Dumbovitza, tributary of Danube, capital, seat of trade.

Jassy (90), on affluent of Pruth, tributary of Danube, capital of Wallachia, trade in grain.

Galatz (80), principal port near mouth of Danube.

RUSSIA.

St. Petersburg (928), Gulf of Finland, Neva, capital of Russia, place of trade which in winter is carried on by sledges on the frozen streams.

Moscow (751), Moskva, tributary of Oka, tributary of Volga, chief manufacturing town in Russia, and great centre of trade, formerly capital of country.

Warsaw (406), Vistula, capital of former kingdom of Poland.

Odessa (217), Black Sea, most important seaport in the neighbourhood of the mouths of the Danube, grain, flax, &c.

Riga (169), Baltic, Western Dwina, grain and timber.

Kazan (185), Volga, seat of trade.

Kishinef (180), between Dniester and Pruth, manufacturing town.

Kief (127), Dnieper, river-port, grain and sugar.

Saratof (110), Volga, great annual markets.

Nicolaief (66), Black Sea, Bug, chief station of Black Sea fleet.

Taganrog (63), Sea of Azof, Don, grain..

Kherson (53), Black Sea, Dnieper, grain.

Helsingfors (46), Gulf of Finland, capital of Finland.

Astrakhan (58), Volga, near Caspian sea, principal port for Caspian Sea trade.

Nijni-Novgorod (58), Volga, seat of great annual fairs.

Orenburg (35), Ural, centre of caravan trade with Asia.

Archangel (20), White Sea, Northern Dwina, grain, flax, linseed, tar, timber.

SERVIA.

Belgrade (36), Danube, at junction of Save, capital.

SPAIN.

Madrid (392), Manzanares, trib. Tagus, capital.

Barcelona (247), Mediterranean, principal seaport and manufacturing centre in country, cotton, silk, wool; harbour excellent.

Valencia (144), Mediterranean, Guadalaviar, silk spinning and weaving.

Seville (133), Guadalquivir, at the head of navigation for sea-going ships, wine and fruits, manufactures increasing.

Malaga (113), Mediterranean, wine and fruits.

Murcia (94), Segura, straw-plaiting industry.

Granada (73), Genil, tributary of Guadalquivir, a celebrated city of the Moors, beautifully situated, now a shadow of its former greatness.

Cadiz (58), Atlantic, not far from Jerez, from which sherry wine takes its name, trade in sherry wine, southern fruits, and salt.

Cordova (49), Guadalquivir; **Toledo** (21), Tagus—both decayed cities, formerly celebrated.

Santander (35), Bay of Biscay, principal seaport on north coast of Spain.

SWEDEN.

Stockholm (185), Baltic, Lake Mälär, capital of Sweden, beautifully situated.

Gothenburg (81), Kattegat, herring-fishing centre, seat of cotton-spinning and other industries.

SWITZERLAND.

Bern (44), Aar, capital of Confederacy.

Zürich (25; 76), on lake of same name, where Limmat, tributary of Aar, issues from it; cotton manufactures.

Geneva (50; 68), on lake of same name, where Rhone issues from it, seat of trade and manufactures.

Basel or Bâle (61), Rhine, ribbon manufactures.

TURKEY.

Constantinople (6-700), Sea of Marmora and Bosphorus, great centre of communication between east and west (Europe and Asia).

Salonika (60-80), Ægean Sea, silk, silkworms, grain, &c.

Adrianople (60), Maritza, manufactures of silks, woollens, cottons, carpets, &c.

Gallipoli (30), Ægean Sea.

AMERICA.*States of North America.*

Name	Area in thousands of sq. m.	Ratio to Great Britain	Population in thousands	Population per sq. mile	Principal Exports
United States	3694	41	50,442	14	Cotton, corn and flour, pork, petroleum, cotton goods, hides, tobacco, hops, butter, cheese.
Mexico . .	750	8½	9,788	13	Silver, gold, ores, cattle, hides, vanilla, coffee, cocoa, tobacco, hemp, timber and dye-woods.
Central America	172	2	2,644	16	Coffee, cocoa, indigo, sugar, tobacco, rice, cochineal.

CHIEF TOWNS IN THE UNITED STATES.

Washington (147; 160), Potomac, seat of government of the Union.

New York (1,206; including Brooklyn and Jersey city, 1,942), Atlantic, Hudson River, chief centre of commerce, principal seaport in the world after Liverpool and London.

Philadelphia (847; 889), Atlantic, Delaware Bay, agricultural produce, petroleum, iron, centre of American book trade.

Chicago (508), lake-port, head of Lake Michigan, grain, animal products, timber.

Boston (368 ; 437), Atlantic, export of ice, &c.; in the suburb of Cambridge, Harvard University.

St. Louis (350), Missouri, important river-port and railway centre, furs, tobacco, hemp, grain, &c., seat of important iron industry and other manufactures.

Baltimore (332), Atlantic, Chesapeake Bay, tobacco, cotton, shipbuilding.

Cincinnati (255, with Covington 285), Ohio, 'Porcopolis,' with an enormous trade in pork, and with various manufactures.

San Francisco (234), Pacific Ocean, chief port on west coast, precious metals, hides, wool, grain, copper ores, timber, &c.

New Orleans (216), Gulf of Mexico, Mississippi, chief cotton port in the United States.

Cleveland (160), Lake Erie, extensive iron and other works.

Pittsburg (156 ; with Alleghany, 235), Ohio, at the point where the Alleghany and Monongahela unite to form this river ; centre of a region yielding coal, iron, and petroleum in great abundance.

Buffalo (155), east end of Lake Erie, great lake and river trade in grain and timber.

Louisville (124 ; 150), Ohio, centre of tobacco trade.

Detroit (116), between Lakes Huron and Erie, extensive trade.

Milwaukee (116), west coast of Lake Michigan ; grain, lead.

Albany (91), Hudson, great river-port.

Minneapolis (47 ; with St. Paul, 88), Mississippi, with numerous large flour-mills.

Lowell (59), Merrimac, the 'American Manchester.'

The States of South America.

Name	Area in thousands of sq. m.	Ratio to Great Britain	Population in thousands	Population per sq. m.	Principal exports	Chief towns
Argentine Confederation .	1,095	12	2,942	2½	Wool, hides, horseshair, horns, bones, tallow, preserved meat.	Buenos Ayres (325), Cordoba (40).
Bolivia . .	488	5½	2,325	4¾	Wool, guano, silver, Peruvian bark.	Sucre (12), La Paz (26).
Brazil . .	3,218	36	12,000	3¾	Coffee, cotton, sugar, hides, tobacco, Paraguay tea, dye-woods.	Rio Janeiro (350), Bahia (140), Recife (130).
Chile . .	246	2¾	2,238	9	Guano, nitrate of soda, silver, copper, wheat and maize, wool, flour, cloves, ivory, nuts, dye-woods.	Santiago (200), Valparaíso (95).
Colombia . .	321	3½	3,000	10	Tobacco, coffee, Peruvian bark, caoutchouc, ivory nuts, dye-woods.	Bogota (95).
Ecuador . .	251	2¾	1,146	4½	Cocoa, coffee, caoutchouc, Peruvian bark.	Quito (80), Guayaquil (40).
Guiana, British	85	1	252	3	} Sugar, molasses, rum. Paraguay tea, tobacco, cigars, llama and alpaca wool.	{ Georgetown (37). Paramaribo (27). Cayenne (8). Asuncion (16).
" Dutch	46	½	70	1½		
" French	47	½	26	½		
Paraguay . .	92	½	476	5	Guano, nitrate of soda, sugar, salt.	Lima (100), Callao (35).
Peru . .	489	5½	3,000	6	Hides, skins, wool, horseshair, tallow, preserved meat, and extract of meat.	Montevideo (75).
Uruguay . .	72	¾	438	6		

*List of some of the more noteworthy Wild Animals
belonging to Europe and America.*

[In the columns on the right a cross indicates merely the presence of the animal in the continent named; the letters N. S. E. W. (for north, south, east, and west), and the abbreviation Arct. (for Arctic Regions) indicate also the part of the continent where it is found.]

	Europe	N. America	S. America
<i>Mammals.—Monkeys.</i>			
Barbary Ape or Magot, a monkey without a tail, the only monkey in Europe, now confined in that continent to the Rock of Gibraltar	S.W.		
Howling Monkey, a monkey with a remarkable apparatus in the throat enabling it to utter terrible howls			×
Spider Monkey, so called on account of its extremely long and slender limbs and tail .			×
Marmoset, a small monkey differing from other monkeys in having claws instead of nails on its fingers and toes.			×
<i>Hoofed Animals.</i>			
Reindeer, a deer with antlers both on the male and the female; both wild and domesticated	Arct.	Arct.	
Moose or Elk, the largest of the deer family .	E.	×	
Chamois, an animal with short horns curved backwards at the tips; it frequents only the highest mountains, and is remarkable for its sure-footedness	×		
Saiga, an inelegant species of antelope with large swollen nose	S.E.		
Steinbock or Ibex, a species of goat with long curved horns transversely ribbed, confined to the highest parts of mountain ranges .	×		

	Europe	N. America	S. America
Rocky Mountain Goat, a very large and powerful goat belonging to the region from which it takes its name		x	
Musimon or European Mouflon, a sheep with large, thick, curved horns	S.		
Bighorn or Mountain Sheep, a very large sheep with horns like the musimon		x	
European Bison, a kind of ox with large vaulted forehead, short thick horns, and very high shoulders	E.		
American Bison, called in America the buffalo, an animal becoming rapidly exterminated, but still roaming in immense herds over the prairies		x	
American Tapir, an animal of about the size of an ass, and with the general appearance of a pig			x
Peccaries, pig-like animals peculiar to America		S.	x
Llama, the South American camel, used like the latter as a beast of burden. It is much smaller than the camel. Closely allied are the Alpaca, Guanaco, and Vicuña, all belonging to the same continent			x
<i>Carnivorous Animals, or Animals with teeth like those of the Cat or Dog.</i>			
Wolf, a savage animal like a dog, now chiefly confined in Europe to Russia and Hungary, and the forests of Germany, Switzerland, and France	x	x	
Prairie Wolf or Coyote, an American wolf very abundant in the prairies. It barks somewhat like a dog		x	
Glutton, an animal remarkable for its voracity	Arct.	Arct.	
Sable, Marten, Stoat, small but fierce animals yielding valuable furs	x	x	
Lynx, an animal like a cat, but with tufts at the end of the ears	x		
Jaguar, a beast of prey with a spotted coat, rather smaller than a tiger		S.	x

	Europe	N. America	S. America
Puma or Cougar, a smaller beast of prey of a uniform dusky colour, which has earned for it the name of 'the American lion'		x	x
Ocelot, a still smaller beast of prey, with a silky coat, reddish above and lighter coloured underneath		S.	x
Polar Bear, a very large and powerful bear, generally found on the ice or in the water	Arct.	Arct.	
Grizzly Bear, a large and fierce bear of a brownish grey colour inhabiting the Rocky Mountains		x	
Brown Bear, the common bear with a brown fur	x		
Black Bear, a climber, armed with very powerful claws		x	
Raccoon, a small bear-like animal, living chiefly on trees, but remarkable for its habit of washing its food in water		x	
Coati, a bear-like animal larger than the raccoon, with a long snout, by means of which it digs in the earth like a pig			x
<i>Marine Carnivora.</i>			
The Common Seal, an animal with a body shaped like a spindle, and with fore- and hind-flippers, by means of which it swims	x	x	x
The Sea-lion, a kind of seal distinguished by the possession of external ears		x	x
Walrus, a large seal-like animal, with two strong tusks in the upper jaw	Arct.	Arct.	
<i>Whales and their Allies.</i>			
The Right Whale, a mammal with whalebone in the mouth in place of teeth	x	x	
The Narwhal, a kind of whale with a single long tusk running straight forwards	Arct.	Arct.	
<i>The Sea-cows.</i>			
Manatees, animals which feed on aquatic plants and inhabit the coasts and rivers of the east of America as far north as the Gulf of Mexico		S.E.	E.

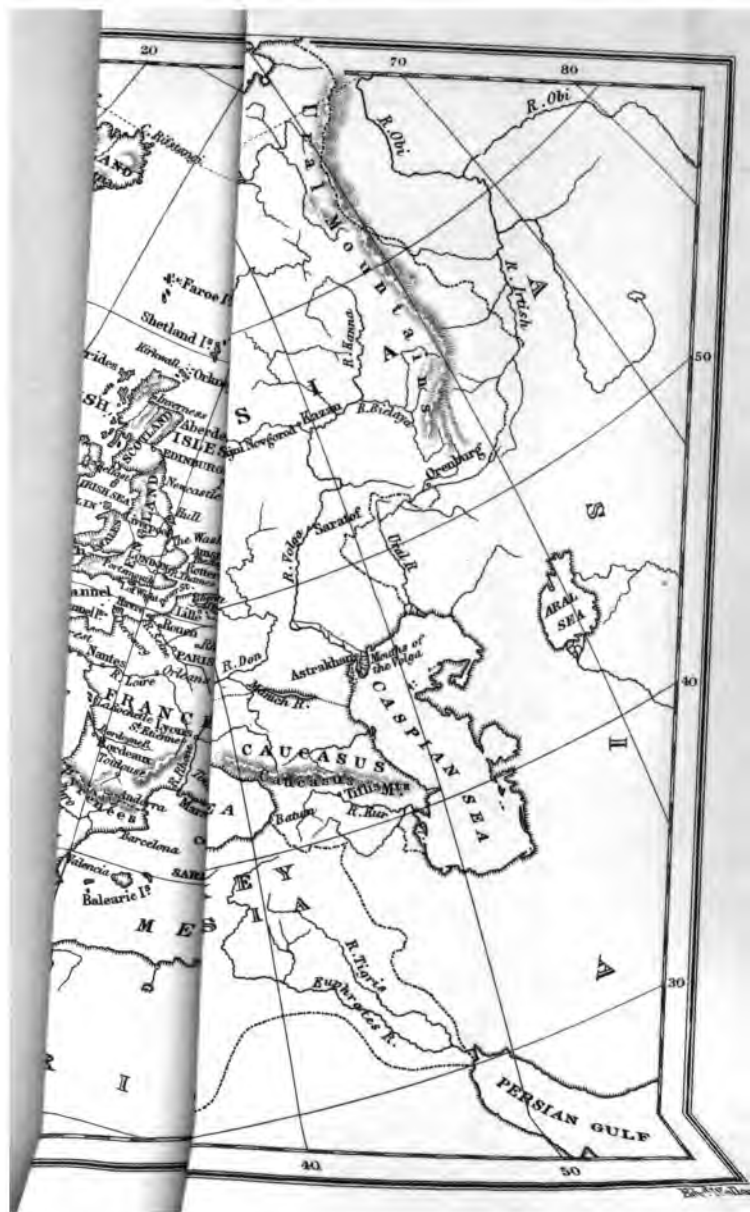
	Europe	N. America	S. America
<i>Insect-eaters.</i>			
Hedgehog, an animal defended by spines on the back, and capable of rolling itself up into a ball when attacked, so as to present the spines to its assailant on all sides.	×		
Mole, an animal with a soft velvety fur and very strong fore-feet for burrowing; it lives in skilfully made underground chambers.	×	×	
Star-nosed Mole, a mole with a number of points radiating all round from the end of its snout.		×	
Desmans, animals inhabiting underground chambers on the banks of rivers, in which they find their food by swimming and diving. One species is met with in the streams of the Pyrenees, another in those of the Russian steppes.	×		
<i>Bats.</i>			
Vampyre, a large bat which sometimes sucks the blood of men and the lower animals.			×
<i>Gnawing Animals, with teeth like those of the Mouse or Rabbit.</i>			
Alpine Hare, a hare which acquires a white coat in winter.	×		
Marmot, a burrowing animal inhabiting the higher parts of mountains. It utters a shrill whistling sound, and is remarkable for its habit of sitting erect on its hind legs on the watch against enemies.	×	×	
Bobak, a small kind of marmot inhabiting the Russian steppes.	×		
Prairie Dog, an animal resembling a marmot, inhabiting the prairies of North America, and remarkable for uttering a noise like the bark of a dog.		×	
Squirrel, a gnawing animal which lives on trees and is distinguished by its long bushy tail.	×	×	

	Europe	N. America	S. America
Spermophile, a squirrel-like animal, with a tail less long and less bushy than that of a squirrel	×	×	
Porcupine, an animal about two feet in length, armed on the back with long horny spines like quills	S.		
Beaver, one of the largest of the gnawing animals. It is remarkable for its habit of constructing dams with branches of trees in the course of rivers	E.	×	
Gopher, an animal of the size of a small rabbit, which lives exactly like a mole	×		
Coypu, a burrowing animal about twenty inches in length, exclusive of the tail, inhabiting marshy tracts on the borders of rivers			×
Chinchillas, the name of several species of animals living after the manner of marmots in the higher parts of the Andes			×
Vizcacha, a burrowing animal about twenty inches in length, found everywhere in the Pampas			×
Agouti, an animal of about the size of a hare, which it resembles in its manner of running and leaping			×
Capybara, the largest of the gnawing animals, attaining a length of about four feet. It leads an aquatic life, and is found in all the rivers of South America			×
<i>Edentates, or Animals without teeth, or at least without front teeth.</i>			
The Great Ant-eater, an animal remarkable for its long narrow skull, altogether without teeth, and its large bushy tail. It has a worm-shaped tongue, coated with an adhesive saliva, by means of which it catches the insects on which it feeds			×
Sloths, animals with strong curved claws, by means of which they cling back downwards to the branches of trees			×

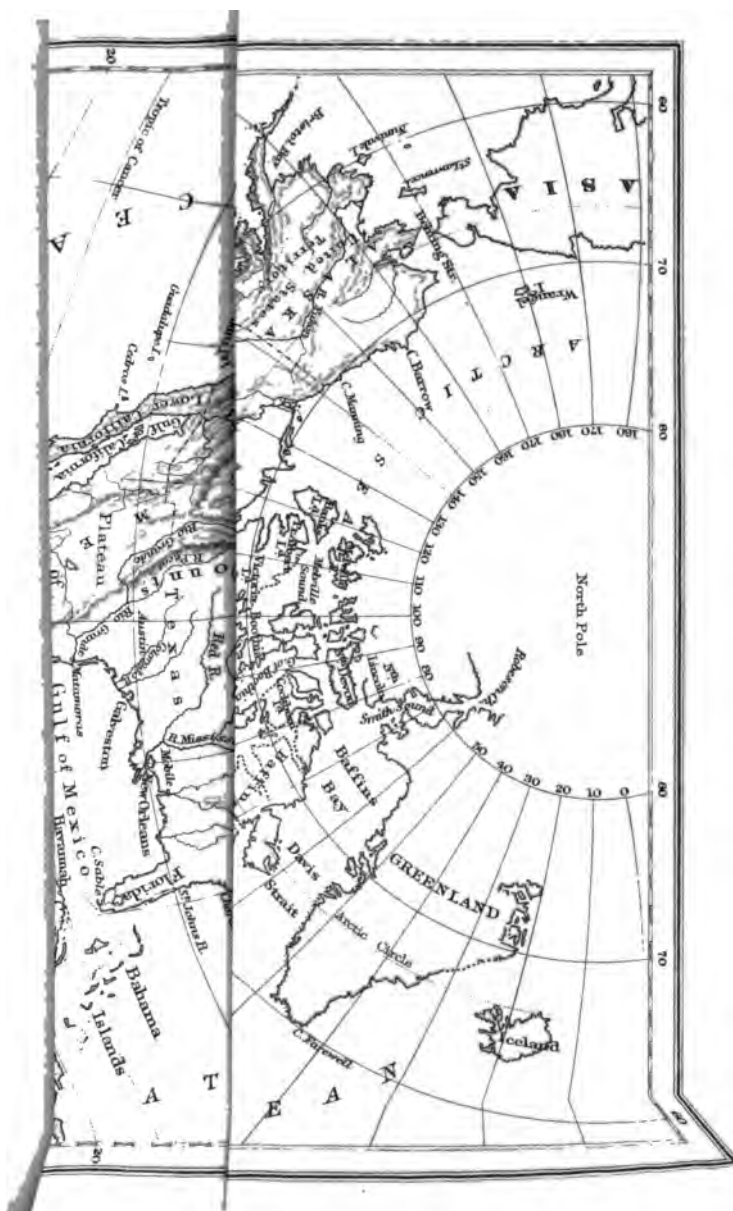
	Europe	N. America	S. America
Armadillos, animals protected on the back by a coat of scaly armour, a portion of which is generally in the form of transverse bands			x
<i>Marsupials.</i>			
Opossums, animals varying in size from that of a mouse to that of a rat, remarkable as being the only animals outside of Australasia in which the females have on the under side of the body a pouch, in which they carry about their young for a short time after birth		x	x
Yapock, an aquatic opossum			x
<i>Birds.</i>			
Humming-birds, very small birds distinguished by the glittering metallic lustre of their plumage, and by the peculiar buzzing sound made by the motion of their wings		S.	x
Parrots, Macaws, and Trogons, different kinds of gaily-coloured birds found in forests		S.	x
Flamingos, very long-legged wading birds with white and red plumage			x
Toucans, birds with enormous bright-coloured beaks			x
Condor, a huge kind of vulture belonging to the Andes. Its expanded wings sometimes measure eleven feet from tip to tip			x
Rhea, a large running-bird resembling an ostrich			x
<i>Reptiles.</i>			
Rattlesnake, a large and very venomous snake, which produces a rattling sound by means of the last joints of its tail		x	
Anaconda or Water-hoa, the largest of all serpents, sometimes attaining the length of forty feet. Found in rivers		S.	x

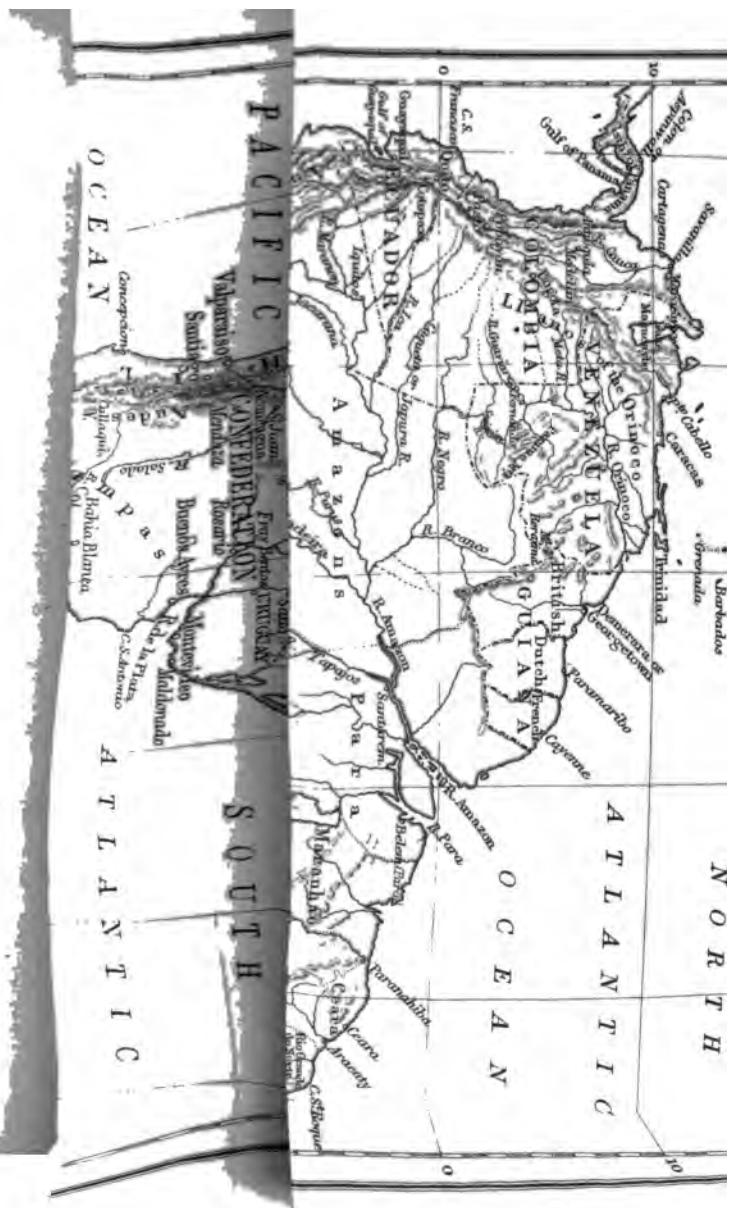
	Europe	N. America	S. America
Boa Constrictor, a serpent about twenty feet in length, which kills its prey by twining round it and crushing it			x
Coral Snake, a small snake plentiful in Brazil, adorned with beautiful zigzag bands of red and black			x
Alligators, animals like crocodiles, protected by strong scales, and with powerful jaws containing numerous conical teeth. They inhabit the rivers of tropical America		S.	x
Turtles, reptiles distinguished by their flat round forms; inhabitants of the rivers		N.	x
<i>Fishes.</i>			
The Electric Eel, an eel of about five or six feet in length, remarkable for its power of sending an electric shock through other animals with which it comes in contact, so as to stun or even kill them			x
<i>Insects.</i>			
Locusts, insects often found in immense swarms, which do enormous damage to green crops	E.	x	
Mosquitoes, very small insects, which are a great pest from their attacking the exposed parts of the body in man, especially the parts round the eyes	x	x	x
Glow-flies, insects emitting a phosphorescent light, extremely abundant in the forests of Brazil		x	x











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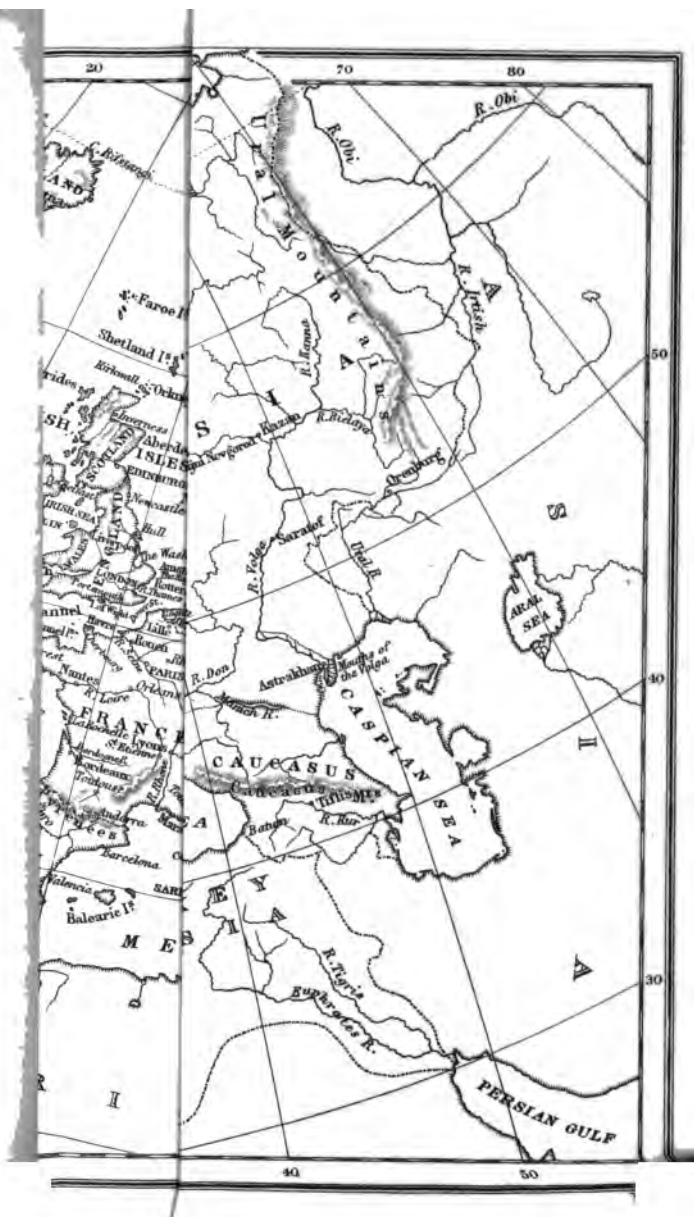
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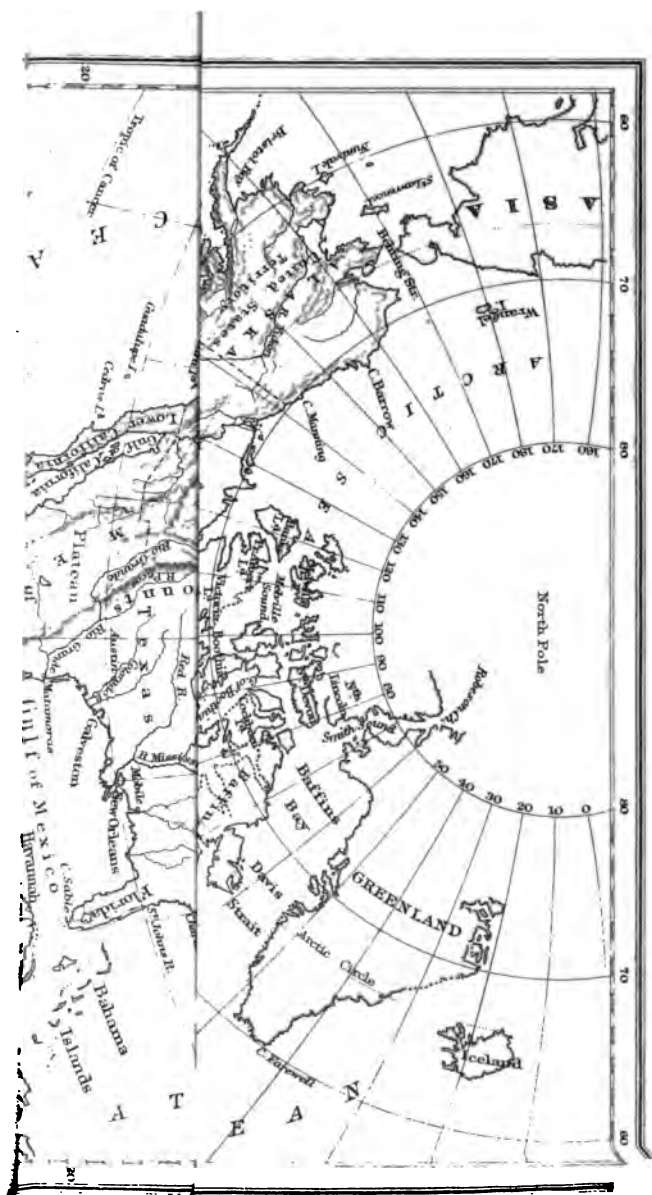
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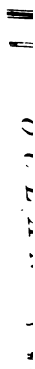
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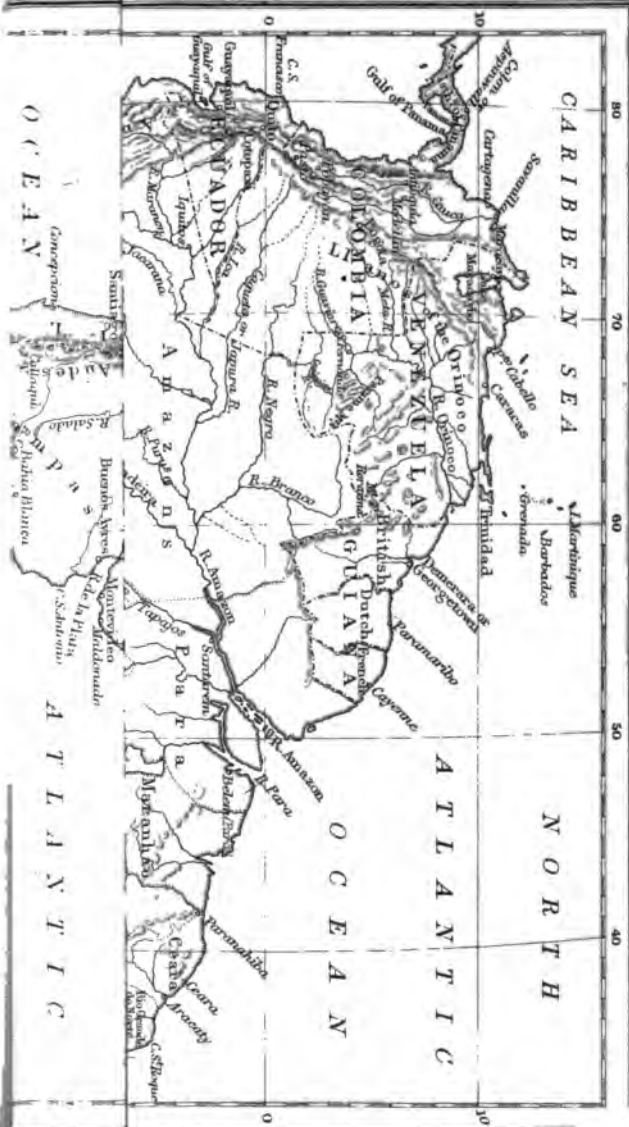
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